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BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

1-OCT 1948
PURCHASED

EDITED BY

CAPTAIN C. H. B. GRANT.

VOLUME 68.

SESSION 1947–1948.

LONDON:

H. F. & G. WITHERBY, 5 WARWICK COURT, W.C. 2.

1948.

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PREFACE.

NINE Meetings and dinners were held during the Session 1947–48.

The Annual General Meeting took place on Wednesday, 15 October 1947, at the Rembrandt Hotel, South Kensington, and was attended by 25 Members.

The number of attendances for the Session was as follows:—Members of the Club 267, Guests of the Club 2, Other Guests 73, a total of 342. The Guests of the Club were Lieut. W Rydzewski and Mr. B. J. Marples.

Many interesting exhibits and talks were given during the Session, including descriptions of one new genus, two new species, twenty new races and one new name.

C. H. B. GRANT.

London, July 1948.

BRITISH ORNITHOLOGISTS' CLUB.

(Founded October 5, 1892.)

TITLE AND OBJECTS.

The objects of the Club, which shall be called the "British Ornithologists' Club", are the promotion of social intercourse between Members of the British Ornithologists' Union and to facilitate the publication of scientific information connected with ornithology.

RULES.

(*As amended, October* 12, 1938.)

Management.

1. The affairs of the Club shall be managed by a Committee, to consist of a Chairman, who shall be elected for three years, at the end of which period he shall not be eligible for re-election for the next term; two Vice-Chairmen, who shall serve for one year, and who shall not be eligible for the next year; an Editor of the 'Bulletin', who shall be elected for five years, at the end of which period he shall not be eligible for re-election for the next term; a Secretary and a Treasurer, who shall each be elected for a term of one year, but who shall be eligible for re-election. There shall be in addition four other Members, the senior of whom shall retire each year, and another Member be elected in his place; every third year the two senior Members shall retire and two other Members be elected in their place. Officers and Members of the Committee shall be elected by the Members of the Club at a General Meeting, and the names of such Officers and Members of Committee nominated by the Committee for the ensuing year shall be circulated with the notice convening the General Meeting at least two weeks before the Meeting. Should any member wish to propose another candidate, the nomination of such, signed by at least two Members, must reach the Secretary at least one clear week before the Annual General Meeting.

2. Any Member desiring to make a complaint of the manner in which the affairs of the Club are conducted must communicate in writing with the Chairman, who will, if he deem fit, call a Committee Meeting to deal with the matter.

3. If the conduct of any Member shall be deemed by the Committee to be prejudicial to the interest of the Club, he may be requested by the Committee to withdraw from the Club. In the case of refusal, his name may be removed from the list of Members at a General Meeting, provided that, in the notice calling the Meeting, intimation of the proposed resolution to remove his name shall have been given, and that a majority of the Members voting at such Meeting record their votes for his removal.

Subscriptions.

4. Any Member of the British Ornithologists' Union may become a Member of the Club on payment to the Treasurer of an entrance-fee of one pound and a subscription of one guinea for the current Session. On Membership of the Union ceasing, Membership of the Club also ceases.

Any Member who has not paid his subscription before the last Meeting of the Session shall cease, *ipso facto*, to be a Member of the Club, but may be reinstated on payment of arrears.

Any Member who has resigned less than five years ago may be reinstated without payment of another Entrance Fee.

Any Member who resigns his Membership on going abroad may be readmitted without payment of a further Entrance Fee at the Committee's discretion.

Temporary Associates.

5. Members of the British Ornithologists' Union who are ordinarily resident outside the British Isles, and ornithologists from the British Empire overseas or from foreign countries, may be admitted at the discretion of the Committee as Temporary Associates of the Club for the duration of any visit to the British Isles not exceeding one Session. An entrance fee of five shillings shall be payable in respect of every such admission

if the period exceeds three months. The privileges of Temporary Associates shall be limited to attendance at the ordinary meetings of the Club and the introduction of guests.

Meetings.

6. The Club will meet, as a rule, on the second Wednesday in every month, from October to June inclusive, at such hour and place as may be arranged by the Committee, but should such Wednesday happen to be Ash Wednesday, the Meeting will take place on the Wednesday following. At these Meetings papers upon ornithological subjects will be read, specimens exhibited and described, and discussion invited.

7. A General Meeting of the Club shall be held on the day of the October Meeting of each Session, and the Treasurer shall present thereat the Balance-Sheet and Report; and the election of Officers and Committee, in so far as their election is required, shall be held at such Meeting.

8. A Special General Meeting may be called at the instance of the Committee for any purpose which they deem to be of sufficient importance, or at the instance of not fewer than fifteen Members. Notice of not less than two weeks shall be given of every General and Special General Meeting.

Introduction of Visitors.

9. Members may introduce visitors at any ordinary Meeting of the Club, but the same guest shall not be eligible to attend on more than three occasions during the Session. No former Member who has been removed for non-payment of subscription, or for any other cause, shall be allowed to attend as a guest.

'Bulletin' of the Club.

10. An Abstract of the Proceedings of the Club shall be printed as soon as possible after each Meeting, under the title of the 'Bulletin of the British Ornithologists' Club', and shall be distributed gratis to every Member who has paid his subscription.

Contributors are entitled to six free copies of the 'Bulletin', but if they desire to exercise this privilege they must give notice to the Editor when their manuscript is handed in. Members purchasing extra copies of the 'Bulletin' are entitled to a rebate of 25 per cent. on the published price, but not more than two copies can be sold to any Member unless ordered before printing.

Descriptions of new species may be published in the 'Bulletin', although such were not communicated at the Meeting of the Club. This shall be done at the discretion of the Editor and so long as the publication of the 'Bulletin' is not unduly delayed thereby.

Any person speaking at a Meeting of the Club shall be allowed subsequently—subject to the discretion of the Editor—to amplify his remarks in the 'Bulletin', but no fresh matter shall be incorporated with such remarks.

11. No communication, the whole or any important part of which has already been published elsewhere, shall be eligible for publication in the 'Bulletin', except at the discretion of the Editor; and no communication made to the Club may be subsequently published elsewhere without the written sanction of the Editor.

Alteration and Repeal of Rules.

12. Any suggested alteration or repeal of a standing rule shall be submitted to Members to be voted upon at a General Meeting convened for that purpose.

COMMITTEE, 1947–1948.

Dr. J. M. Harrison, *Chairman* (elected 1946).
Lt.-Col. W. P. C. Tenison, *Vice-Chairman* (elected 1947).
Miss Eva M. Godman, *Vice-Chairman* (elected 1947).
Captain C. H. B. Grant, *Editor* (elected 1947).
Mr. W. E. Glegg, *Hon. Secretary* (elected 1947).
Miss E. P. Leach, *Hon. Treasurer* (elected 1942).
Miss G. M. Rhodes (elected 1945).
Mr. J. D. Macdonald (elected 1946).
Mr. P. A. D. Hollom (elected 1947).

Officers of the British Ornithologists' Club, Past and Present.

Chairmen.

P. L. Sclater, F.R.S.	1892–1913.
Lord Rothschild, F.R.S.	1913–1918.
W. L. Sclater.	1918–1924.
H. F. Witherby.	1924–1927.
Dr. P. R. Lowe.	1927–1930.
Major S. S. Flower.	1930–1932.
D. A. Bannerman.	1932–1935.
G. M. Mathews.	1935–1938.
Dr. A. Landsborough Thomson.	1938–1943.
D. Seth-Smith.	1943–1946.
Dr. J. M. Harrison.	1946–

Vice-Chairmen.

Lord Rothschild, F.R.S.	1930–1931.
W. L. Sclater.	1931–1932.
H. F. Witherby.	1932–1933.
G. M. Mathews.	1933–1934.
N. B. Kinnear.	1934–1935.
H. Whistler.	1935–1936.
D. Seth-Smith.	1936–1937.
Col. R. Sparrow.	1937–1938.
Dr. G. Carmichael Low.	1938–1939.
Hon. Guy Charteris.	1938–1939.
W. L. Sclater.	1939–1940.
Dr. D. A. Bannerman.	1939–1940.
Captain C. H B. Grant.	1940–1943.
B. W. Tucker.	1940–1943.
F. J. F. Barrington.	1943–1945.
Dr. E. Hopkinson.	1943–1945.
C. W. Mackworth-Praed	1945–1946.
Dr. J. M. Harrison.	1945–1946.
Sir Philip Manson-Bahr.	1946–1947.
B. G. Harrison.	1946–1947.
Lt.-Col. W. P. C. Tenison.	1947–1948.
Miss E. M. Godman.	1947–1948.

Editors.

R. Bowdler Sharpe.	1892–1904.
W. R. Ogilvie-Grant.	1904–1914.
D. A. Bannerman.	1914–1915.
D. Seth-Smith.	1915–1920.

Editors (*cont.*).

Dr. P. R. Lowe.	1920–1925.
N. B. Kinnear.	1925–1930.
Dr. G. Carmichael Low.	1930–1935.
Captain C. H. B. Grant.	1935–1940.
Dr. G. Carmichael Low.	1940–1945.
Lt.-Col. W. P. C. Tenison.	1945–1947.
Captain C. H. B. Grant.	1947–

Honorary Secretaries and Treasurers.

Howard Saunders.	1892–1899.
W. E. de Winton.	1899–1904.
H. F. Witherby.	1904–1914.
Dr. P. R. Lowe.	1914–1915.
C. G. Talbot-Ponsonby.	1915–1918.
D. A. Bannerman.	1918–1919
Dr. Philip Gosse.	1919–1920.
J. L. Bonhote.	1920–1922.
C. W. Mackworth-Praed.	1922–1923.
Dr. G. Carmichael Low.	1923–1929.
C. W. Mackworth-Praed.	1929–1935.

Honorary Secretaries.

Dr. A. Landsborough Thomson.	1935–1938.
C. R. Stonor.	1938–1940.
N. B. Kinnear.	1940–1943.
Dr. G. Carmichael Low.	1943–1945.
Lt.-Col. W. P. C. Tenison.	1945–1947.
Captain C. H. B. Grant.	1947.
W. E. Glegg.	1947–

Honorary Treasurers.

C. W. Mackworth-Praed.	1935–1936.
Major A. G. L. Sladen.	1936–1942.
Miss E. P. Leach.	1942–

LIST OF MEMBERS.

JUNE 1948.

1930. Acland, Miss C. M. ; Grassholm, 2 Orchard Close, Banstead, Surrey.

1912. Alexander, H. G. ; 144 Oak Tree Lane, Selly Oak, Birmingham.

1946. Allen, R. C. R. ; Gorstage House, Weaverham, Cheshire.

1947. Band, R. M. ; 516 North Drive, Cleveleys, near Blackpool, Lancashire.

1910. Bannerman, David A., M.B.E., M.A., Sc.D., F.R.S.E., H.F.A.O.U. (*Editor*, 1914–1915 ; *Hon. Secretary*, 1918–1919 ; *Hon. Treasurer*, 1918–1919 ; *Committee*, 1922–1925 ; *Chairman*, 1932–1935 ; *Vice-Chairman*, 1939–1940) ; British Museum (Natural History), Cromwell Road, London, S.W.7.

1933. Barclay-Smith, Miss Phyllis (*Committee*, 1941–1944) ; 51 Warwick Avenue, London, W.9.

1935. Barnes, Mrs. E. ; Hungerdown, Seagry, Chippenham, Wiltshire.

1925. Barrington, Frederick J. F., M.S., F.R.C.S. (*Committee*, 1929–1932 ; *Vice-Chairman*, 1943–1945) ; 52 Harley Street, London, W.1

1946. Beal, Major N. A. G. H. ; Holnicote, Tanners Hill, Hythe, Kent.

1947. Belcher, Sir Charles F., K.B.E. ; Kinangop, Kenya Colony.

1937. Benson, C. W. ; c/o Secretariat, Zomba, Nyasaland.

1946. Benson, J. P. ; Dept. of Agriculture, Meru, Kenya Colony and Dellfield, Felden, Hemel Hempstead, Herts.

1922. Best, Miss M. G. S. ; 10a Cresswell Place, London, S.W.10.

1947. Blair, H. M. S., M.B., B.Sc. ; Thorney House, Laygate, South Shields, Durham.

1906. Boorman, S. ; Heath Farm, Send, Woking, Surrey.

1920. Boyd, A. W., M.C. ; Frandley House, near Northwich, Cheshire.

1924. Brown, George ; Combe Manor, Hungerford, Berkshire.

1947. Bryson, A. G. S. ; 20 Inverleith Place, Edinburgh, 4, Scotland.

1947. Bushell, Douglas ; Willow Cottage, Frimley Road, Camberley, Surrey.

1911. Buxton, Major Anthony, D.S.O., D.L. ; Horsey Hall, near Great Yarmouth, Norfolk.

1947. Campbell, Bruce ; 2 Derwen Road, Cyncoed, Cardiff, Wales.
1933. Campbell, Dr. James W. ; Ardrennich, Strathtay, Perthshire.
1936. Cave, Colonel F. O. ; Stoner Hill, Petersfield, Hampshire.
1946. Chadwyck-Healey, Mrs. G. M. ; 15 Cadogan Court, Draycott Avenue, London, S.W.3.
1936. Chapin, Dr. James P. ; American Museum of Natural History, Central Park, New York City, U.S.A.
1923. Charteris, Hon. G. L. ; Old House, Didbrook, nr. Cheltenham, Gloucestershire.
1937. Chislett, Ralph ; Brookside, Masham, near Ripon, Yorkshire.
1938. Clancey, P. A. ; 9 Craig Road, Cathcart, Glasgow, S.4, Scotland.
1916. Clarke, John P. Stephenson ; Broadhurst Manor, Horsted Keynes, Sussex.
1892. Clarke, Colonel Stephenson Robert, C.B. ; Borde Hill, Cuckfield, Sussex.
1946. Cohen, E. ; Hazelhurst, Sway, Hampshire.
1946. Collins, S. J. K. ; P.O., Box 570, Nairobi, Kenya Colony.
1942. Coltart, Captain N. B. ; Lenworth, West Street, Haslemere, Surrey.
1933. Conover, H. B. ; 6 Scott Street, Chicago, Illinois, U.S.A.
1927. Cunningham, Captain Josias ; 3 Donegall Square East, Belfast, Ireland.
1945. Dalgety, C. T. ; Lockerley Hall, Romsey, Hampshire.
1947. de Hamel, F. A. ; Holly Cottage, The Warren, Cranleigh, Surrey.
1920. Delacour, Jean ; Stanhope Hotel, Fifth Avenue, and 81st Street, New York, N.Y., U.S.A.
1922. Dewhurst, Colonel F. W. ; Delamore, Cornwood, Ivybridge, Devonshire.
1945. Donaldson, R. Preston ; c/o Royal Society for Protection of Birds, 82 Victoria Street, London, S.W.1.
1942. Duffin, Charles J. ; The Cottage, Lyncroft Gardens, Ewell, Surrey.
1928. Duncan, Arthur Bryce ; Lannhall, Tynron, Dumfriesshire.
1917. Ezra, A., O.B.E. (*Committee*, 1933–1936) ; Foxwarren Park, Cobham, Surrey.
1927. Ferrier, Miss J. M. ; Blakeney Downs, Blakeney, Norfolk.
1936. Fisher, James (*Committee*, 1942–1946) ; The Old Rectory, Ashton, Northamptonshire.

1943. FITTER, R. S. R., B.Sc., F.Z.S. ; Greyhounds, Burford, Oxfordshire.

1929. FOULKES-ROBERTS, Captain P. R., M.C. ; Lamb Hill, Bride, near Ramsey, I. of M.

1933. GILBERT, Captain H. A. ; Bishopstone, near Hereford, Herefordshire.

1927. GLEGG, W. E. (*Committee*, 1947–1948 ; *Hon. Secretary*, 1947–) ; c/o Zoological Museum, Tring, Hertfordshire.

1930. GLENISTER, A. G. ; The Barn House, East Blachington, Seaford, Sussex.

1945. GODMAN, Miss C. E. ; South Lodge, Horsham, Sussex.

1933. GODMAN, Miss EVA M. (*Vice-Chairman*, 1947–1948) ; South Lodge, Horsham, Sussex.

1911. GRANT, Captain C. H. B. (*Committee*, 1944–1947 ; *Editor*, 1935–1940 and 1947– ; *Vice-Chairman*, 1940–1943 ; *Acting Hon. Secretary*, 1947) ; 8 Cornwall Gardens Court, 50 Cornwall Gardens, London, S.W.7.

1946. GUDMUNDSSON, Dr. F. ; Museum of Natural History, Reykjavik, Iceland.

1928. HARRISON, BERNARD GUY (*Committee*, 1940–1944 ; *Vice-Chairman*, 1946–1947) ; 45 St. Martin's Lane, London, W.C.2.

1922. HARRISON, JAMES M., D.S.C., M.R.C.S., L.R.C.P. (*Committee*, 1933–1936 ; *Vice-Chairman*, 1945–1946 ; *Chairman*, 1946–) ; Bowerwood House, St. Botolph's Road, Sevenoaks, Kent.

1943. HARRISON, Dr. JEFFERY G. ; Bowerwood House, St. Botolph's Road, Sevenoaks, Kent.

1946. HARTLEY, P. H. T. ; Wray Castle Cottage, Ambleside, Westmorland.

1946. HAVERSCHMIDT, F. ; 14 Waterkant, Paramaribo, Dutch Guiana.

1927. HEATH, R. E. ; 2 Pembroke Court, Edwardes Square, London, W.8.

1933. HOLLOM, P. A. D. (*Committee*, 1938–1940 and 1947–) ; Manor Cottage, Park Road, Woking, Surrey.

1945. HOMES, R. C. ; 62 D Albemarle Road, Beckenham, Kent.

1925. HOPKINSON, EMILIUS, C.M.G., D.S.O., M.B. (*Vice-Chairman*, 1943–1945) ; Wynstay, Balcombe, Sussex.

1946. HUNT, G. H. ; White Chimneys, Cheveney Road, Quorn Loughborough, Leicestershire.

1928. Hutson, Major-General H. P. W., C.B., M.C. ; Forestry Commission, 25 Savile Row, London, W.1.

1921. Inglis, C. McFarlane ; Kenilworth, Coonoor P.O., Nilgiris, India.

1902. Ingram, Captain Collingwood ; The Grange, Benenden, Cranbrook, Kent.

1939. James, Miss Celia K. ; Blake's Wood, Barnt Green, Birmingham.

1931. Jordan, H. E. Karl, Ph.D., F.R.S., F.R.E.S., F.Z.S. ; Zoological Museum, Tring, Hertfordshire.

1947. Justice, J. R. ; Orchardton, Wigtown, Wigtownshire, Scotland.

1904. Kinnear, Norman B., C.B. (*Editor*, 1925–1930 ; *Vice-Chairman* 1934–1935 ; *Hon. Secretary*, 1940–1943) ; British Museum (Natural History), Cromwell Road, London, S.W.7.

1942. Lack, David ; Edward Grey Institute of Field Ornithology, 91 Banbury Road, Oxford.

1946. Laurie, M. V. ; c/o Mrs. Powell, Curtis Farm, Headley, Bordon, Hampshire.

1931. Leach, Miss E. P. (*Committee*, 1937–1942 ; *Hon. Treasurer*, 1942–) ; 94 Kensington Court, London, W.8.

1926. Lewis, John Spedan ; Leckford Abbas, Stockbridge, Hampshire.

1935. Longfield, Miss Cynthia ; 11 Iverna Gardens, London, W.8.

1921. Low, George Carmichael, M.A., M.D., C.M., F.R.C.P., F.Z.S. (*Hon. Secretary*, 1923–1929, 1943–1945 ; *Hon. Treasurer*, 1923–1929 ; *Editor*, 1930–1935 and 1940–1945 ; *Vice-Chairman*, 1938–1939) ; 7 Kent House, Kensington Court, Kensington, London, W.8.

1907. Lowe, P. R., O.B.E., M.B., B.C. (*Hon. Secretary*, 1914–1915 ; *Hon. Treasurer*, 1914–1915 ; *Editor*, 1920–1925 ; *Chairman*, 1927–1930) ; 2 Hugo House, 179 Sloane Street, London, S.W.1 ; and Parkland, Burley, Ringwood, Hampshire.

1944. McCulloch, Captain G. ; 65 Chester Road, Northwood, Middlesex.

1935. Macdonald, J. D., B.Sc. (For.), B.Sc. (*Committee*, 1946–) ; British Museum (Natural History), Cromwell Road, London, S.W.7.

1921. Mackenzie, John M. D., B.A., C.M.Z.S. ; Sidlaw Fur Farm, Tullach Ard, Balbeggie, Perthshire, Scotland.

1931. McKittrick, T. H. ; The Chase National Bank of the City of New York, Pine Street Corner of Nassau, New York, U.S.A.

1917. Mackworth-Praed, C. W. (*Hon. Secretary*, 1922–1923 and 1929–1935; *Hon. Treasurer*, 1922–1923 and 1929–1936; *Committee*, 1936–1937; *Vice-Chairman*, 1945–1946); Castletop, Burley, near Ringwood, Hampshire.

1908. Macmillan, Captain W. E. F.; 42 Onslow Square, London, S.W.7.

1924. McNeile, J. H. (*Committee*, 1935–1938); Nonsuch, Bromham, Chippenham, Wiltshire.

1933. Macpherson, D. W. K.; P.O., Lilongwe, Nyasaland.

1947. Macphie, David; 14 Trowloch Avenue, Teddington, Middlesex.

1935. Mansfield, The Right Hon. the Earl of; Scone Palace, Perth, Scotland.

1919. Manson-Bahr, Sir Philip, C.M.G., D.S.O., M.D., F.R.C.P. (*Committee*, 1930–1933; *Vice-Chairman*, 1946–1947); 149 Harley Street, London, W.1.

1908. Mathews, G. M., C.B.E., F.R.S.E., H.F.A.O.U. (*Committee*, 1925–1928; *Vice-Chairman*, 1933–1934; *Chairman*, 1935–1938); Meadway, St. Cross, Winchester, Hants.

1933. Mavrogordato, J. G.; c/o Legal Dept., Sudan Govt., Khartoum, Sudan.

1945. May, E. S.; 19 Berceau Walk, Watford, Hertfordshire.

1929. Mayaud, Noël; 36 rue Hoche, Saumur, Maine-et-Loire, France.

1938. Meiklejohn, Lieut.-Colonel R. F.; Arcady, Cley, Holt, Norfolk.

1918. Meinertzhagen, Colonel R., D.S.O., F.Z.S., H.F.A.O.U.; 17 Kensington Park Gardens, London, W.11.

1946. Monk, Dr. J. F.; 344 B Woodstock Road, Oxford.

1946. Morrison, A. F.; P.O. Box 473, Dar-es-Salaam, Tanganyika Territory.

1903. Munn, Captain P. W., F.Z.S.; Hotel Mar y Sol, Puerto Alcudia, Majorca, Balearic Isles, Spain.

1931. Murton, Mrs. C. D.; Cranbrook Lodge, Cranbrook, Kent.

1927. Naumburg, Mrs. W. W.; 121 East 64th Street, New York City, N.Y., U.S.A.

1934. Nicholson, E. M.; 13 Upper Cheyne Row, London, S.W.3.

1936. North, M. E. W.; c/o Secretariat, Nairobi, Kenya Colony and Summerdale, Holme, Carnforth, Lancashire.

1935. Pakenham, R. H. W.; Kingsley, Hurtis Hill, Crowborough, Sussex; and c/o Secretariat, Zanzibar, Eastern Africa.

1945. Parrinder, E. R.; 7 Gwalior House, Chase Road, London, N.14.

1932. Paulson, C. W. G. (*Committee*, 1944–1947) ; Wyresdale House, Pendleton Road, Redhill, Surrey.

1945. Payn, Lt.-Col. W. A. ; The Gables, Osborne Road, Andover, Hampshire.

1931. Peall, Mrs. O. ; Hatfield Farm, Oare, Marlborough, Wiltshire.

1933. Pease, H. J. R. (*Committee*, 1939–1942) ; The Savile Club, 69 Brook Street, London, W.1.

1938. Phillips, A. S. ; Frewin's Close, South Stoke, Reading, Berkshire.

1947. Piercy, K. ; Clifton Cottage, Clifton, Bedfordshire.

1919. Pitman, Captain C. R. S., D.S.O., M.C. ; c/o Grindlay & Co., 54 Parliament Street, London, S.W.1.

1947. Plowden-Wardlaw, W. J. ; Dalchosnie House, Kinloch Rannoch, by Pitlochry, Perthshire, Scotland.

1944. Prestwich, A. A. ; Chelmsford Road, Southgate, London, N.14.

1936. Priestley, Mrs. J. B., O.B.E. ; B. 3, Albany, Piccadilly, London, W.1.

1926. Pye-Smith, Major G. H. R. ; New House, Langham, Colchester, Essex.

1946. Reynolds, Lieut. R. A. W. ; 150 Junction Road, Tufnell Park, London, N.19.

1947. Rhead, A. J. ; P.O. Magadi, Kenya Colony.

1933. Rhodes, Miss G. M. (*Committee*, 1945–) ; Hildersham Hall, Cambridge.

1909. Rivière, B. B., F.R.C.S. ; The Old Hall, Woodbastwick, Norfolk.

1945. Roberts, B. B. ; 9 Pelham Court, 145 Fulham Road, London, S.W.3.

1947. Russell, Lord Hugh ; Crowholt, Woburn, Bletchley, Buckinghamshire.

1933. Sandeman, R. G. C. C. ; Dan-y-parc, Crickhowell, Brecon, Wales.

1932. Schauensee, R. M. de ; Devon, Pennsylvania, U.S.A.

1936. Schouteden, Dr. H. ; Musée du Congo Belge, Tervueren, Belgium.

1946. Scott, Peter, D.S.C. ; 8 Edwardes Square, London, W.8.

1945. Serle, Dr. W. ; 64 Strathearn Road, Edinburgh, Scotland.

1902. Seth-Smith, David (*Committee*, 1905–1912 ; *Editor*, 1915–1920 ; *Vice-Chairman*, 1936–1937 ; *Chairman*, 1943–1946) ; Brabourne, Poyle Road, Guildford, Surrey.

1936. Sherriff, Albert ; 8 Ranulf Road, Hampstead, London, N.W.2.
1930. Simonds, Major Maurice H. ; Fines Baylewick, Binfield, Berkshire.
1919. Sladen, Major A. G. Lambart, M.C. (*Committee*, 1921–1924 ; *Hon. Treasurer*, 1936–1942) ; Crabtree Furlong, Haddenham, Aylesbury, Buckinghamshire ; and 39 St. James's Street, London, S.W.1.
1945. Southern, H. N. ; University Museum, Oxford.
1906. Sparrow, Colonel R., C.M.G., D.S.O. (*Vice-Chairman*, 1937–1938) ; The Lodge, Colne Engaine, Earls Colne, Essex.
1946. Staples, Lt.-Commdr. (S.) C. P., Royal Navy ; Hedgerows, Ickenham, Middlesex.
1925. Stevens, Herbert ; Clovelly, Beaconsfield Road, Tring, Hertfordshire.
1936. Stevens, Noël ; Walcot Hall, Lydbury, North Salop.
1936. Stonor, Lieut. C. R. (*Hon. Secretary*, 1938–1940) ; Parkgates, near Southampton, Hampshire.
1945. Tenison, Lt.-Col. W. P. C., D.S.O., F.L.S., F.Z.S. (*Editor*, 1945–1947 ; *Hon. Secretary*, 1945–1947 ; *Vice-Chairman*, 1947–1948) ; 2 Wool Road, Wimbledon Common, London, S.W.20.
1927. Thomson, A. Landsborough, C.B., O.B E., D.Sc., F.R.S.E. (*Committee*, 1930–1933 ; *Hon. Secretary*, 1935–1938 ; *Chairman*, 1938–1943) ; 16 Tregunter Road, London, S.W.10.
1927. Ticehurst, N. F., O.B.E., M.B., F.R.C.S. (*Committee*, 1912–1914) ; 24 Pevensey Road, St. Leonards-on-Sea, Sussex.
1948. Trott, A. C. ; British Embassy, Jedda, Saudi Arabia, c/o Foreign Office, Whitehall, London, S.W.1.
1924. Tucker, B. W., M.A. (*Committee*, 1928–1931 ; *Vice-Chairman*, 1940–1943) ; 9 Marston Ferry Road, Oxford.
1925. Turtle, Lancelot J. ; 17–21 Castle Place, Belfast, Ireland.
1930. Urquhart, Captain A., D.S.O. ; Latimer Cottage, Latimer, Chesham, Buckinghamshire.
1946. van Someren, G. R. C. ; P.O. Box 651, Nairobi, Kenya Colony.
1920. van Someren, Dr. V. G. L. ; P.O. Box 1682, Nairobi, Kenya Colony.
1933. Vincent, Jack, M.B.E. ; Firle, Mooi River, Natal, South Africa.

1934. WADE, Colonel G. A., M.C.; St. Quintin, Sandy Lane, Newcastle-under-Lyme, Staffordshire.
1924. WAITE, H. W., C.I.E.; c/o Grindlay's Bank, Ltd., 54 Parliament Street, London, S.W.1.
1946. WALTER, C. N.; 32 Stanley Avenue, Beckenham, Kent.
1934. WATT, Mrs. H. WINIFRED BOYD, F.Z.S. (*Committee*, 1942–1945); Basing Lodge, 9 St. Swithuns Road, Bournemouth, Hampshire.
1947. WESTALL, Surgeon-Captain P. R., Royal Horse Guards, B.A.O.R., and Lloyds Bank, West Smithfield, London, E.C.1.
1935. WHITE, CHARLES M. N.; 8 Ansdell Road South, Ansdell, Lytham St. Annes, Lancashire.
1946. WILLIAMS, A.; 80 Troy Court, Kensington High Street, London, W.8.
1903. WORKMAN, WILLIAM HUGHES; Lismore, Windsor Avenue, Belfast, Ireland.
1924. WORMS, CHARLES DE; Milton Park, Egham, Surrey.
1946. WYNNE, Colonel O. E.; Court Wood, Sandleheath, Fordingbridge, Hampshire.

Total number of Members.... 158

NOTICE.

[Members are specially requested to keep the Hon. Secretary informed of any changes in their addresses, and those residing abroad should give early notification of coming home on leave.]

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BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

4 - JUN 1948
PURCHASED

Volume 68.
No. 1.

ANNUAL GENERAL MEETING.

Chairman : Dr. J. M. Harrison.

This was held at the Rembrandt Hotel, Thurloe Place, S.W. 7, on Wednesday, October 15, 1947, at 5.45 p.m.; 25 members were present.

Lt.-Col. W. P. C. Tenison, the Honorary Secretary, read his report for the Session 1945–46. He said that in spite of the fuel crisis and the exceptionally cold winter the Club held its meetings regularly on the third Wednesdays of the months October to June. There was an average attendance of 30 members at each meeting, which might have been greater but for the restrictions imposed by catering difficulties. The attempt made last session to provide lectures of a more or less popular nature was discontinued in deference to the wishes of some members. Ciné-films were, however, shown at two meetings.

The membership of the Club had increased substantially, new members being :—R. C. R. Allen, Mrs. E. Barnes, Major N. A. G. H. Beal, J. P. Benson, Mrs. Chadwyck-Healey, Dr. Finnur Gudmundsson, P. H. T. Hartley, F. Haverschmidt, G. H. Hunt, M. V. Laurie, Dr. J. F. Monk, A. F. Morrison, Major G. H. R. Pye-Smith, R. A. W. Reynolds, Peter Scott, C. P. Staples, G. R. C. van Someren, C. N. Walter, A. Williams and Col. O. Wynne. Miss Ferrier and Mrs. O. Peall had resumed their membership. The following have resigned, namely : Comdr. E. A. Aylmer, D. A. T. Morgan and R. Ware. The deaths of Mrs. T. E. Hodgkin and Dr. A. McMillan have regretfully to be reported. The Club membership now stood at 148. He wished to acknowledge the assistance he had received from Miss E. P. Leach and Miss P. Barclay-Smith during the time he was incapacitated by illness last winter.

Published Dec. 24, 1947. a Price 2/6.

Miss E. P. Leach, the Honorary Treasurer, reported that she had been unable to get in the bills for printing and distribution of the ' Bulletin' up to the present and so could not present an audited account, but it would be printed and circulated in due course.

The printing of the General Index for the ten years 1931–1942 was considered. Mr. Usher had been paid £50 for preparing the slips, but the estimates for the printing and binding were so high that it was decided not to proceed with the publication, the demand not being considered very great.

The question of back numbers in the hands of Messrs. H. F. & G. Witherby was raised. Mr. C. P. Staples kindly offered to look into the legal position as regarding the ownership of the stock in hand. On the proposition of Mr. Macdonald, seconded by Captain Grant, it was agreed that Mr. Staples be co-opted on the Committee for this purpose.

On the recommendation of the Committee and proposed by Mr. James Fisher, seconded by Dr. Jeffery Harrison, it was agreed that the Editor should have a standing invitation to dine at each meeting at the expense of the Club.

Election of Officers.

On the recommendation of the Committee the following officers were duly elected :—Lt.-Col. W. P. C. Tenison and Miss Eva M. Godman to be Vice-Chairmen for the coming session ; Mr. W. E. Glegg and Mr. P. A. D. Hollom to serve on the Committee *vice* Mr. C. W. G. Paulson and Captain C. H. B. Grant who retire by seniority. Miss E. P. Leach was re-elected Honorary Treasurer and Captain C. H. B. Grant was elected Editor and Acting Honorary Secretary.

Vote of Thanks.

It was moved by Dr. Jeffery Harrison and carried with acclamation that Lt.-Col. Tenison be thanked for his services to the Club during the past two sessions.

Committee, 1947–48.

Dr. J. M. Harrison, *Chairman* (elected 1946).
Lt.-Col. W. P. C. Tenison, *Vice-Chairman* (elected 1947).
Miss Eva M. Godman, *Vice-Chairman* (elected 1947).
Captain C. H. B. Grant, *Editor* (elected 1947) ; *Acting Honorary Secretary* (elected 1947).
Miss G. M. Rhodes (elected 1945).
Mr. J. D. Macdonald (elected 1946).
Mr. W. E. Glegg (elected 1947).
Mr. P. A. D. Hollom (elected 1947).

ORDINARY MEETING.

The four-hundred-and-seventieth Meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, S.W. 7, on Wednesday, 15 October, 1947, following a dinner at 6.30 P.M.

Chairman : Dr. J. M. HARRISON.

Members present :—Miss C. M. ACLAND ; Miss P. BARCLAY-SMITH ; F. J. F. BARRINGTON ; Dr. JAMES W. CAMPBELL ; Col. F. O. CAVE ; C. T. DALGETY ; Miss J. M. FERRIES ; J. FISHER ; R. S. R. FITTER ; Capt. H. A. GILBERT ; Miss C. E. GODMAN ; Miss E. M. GODMAN (*Vice-Chairman*) ; Capt. C. H. B. GRANT (*Editor and Acting Hon. Secretary*) ; Dr. J. G. HARRISON ; R. E. HEATH ; N. B. KINNEAR ; Miss E. P. LEACH (*Hon. Treasurer*) ; Dr. P. R. LOWE ; J. D. MACDONALD ; G. M. MATHEWS ; E. S. MAY ; Col. R. MEINERTZHAGEN ; E. R. PARRINDER ; Lt.-Col. W. A. PAYN ; C. W. MACKWORTH-PRAED ; Maj. G. H. R. PYE-SMITH ; Miss G. M. RHODES ; P. SCOTT ; Lieut.-Commander C. P. STAPLES ; Lt.-Col. W. P. C. TENISON (*Vice-Chairman*) ; Dr. A. LANDSBOROUGH-THOMSON ; B. W. TUCKER ; C. N. WALTER ; Mr. H. W. BOYD WATT ; C. M. N. WHITE ; A. WILLIAMS ; C. DE WORMS ; Col. O. E. WYNNE.

Guests :—Col. F. M. BAILEY ; DUKE OF BEDFORD ; Dr. J. BERRY ; G. A. BEST ; C. J. P. CAVE ; Miss T. CLAY ; R. A. H. COOMBES ; Mrs. GILBERT ; Miss GILBERT ; Sir HUGH GLADSTONE ; J. R. GODDARD ; M. KIRKE ; Mrs. P. R. LOWE ; R. E. MOREAU ; A. G. B. RUSSELL ; Mrs. C. P. STAPLES ; Mrs. A. LANDSBOROUGH-THOMSON ; and one other.

Members, 39 ; Guests, 18 ; Total, 57.

Note on Heuglin's Banded Francolin.

Col. F. O. CAVE made the following remarks and exhibited specimens and slides :—

Introduction.

In the J. f. O. of 1863, p. 175, von Heuglin described a new species of Francolin, *Francolinus schlegelii*, from the Bahr-el-Ghazal area of the Sudan. Since that date the bird has been something of a mystery as, until recently, it has been found on only two other occasions, by Tessmann in 1914 and by Blancou in 1934, both at Bozum about 800 miles to the west in French Equatorial Africa. The reason for the mystery can be attributed to two things ; namely, the fact that Francolins can be very local in their distribution, and that there has been some doubt as to the precise locality in which it was found by von Heuglin.

When I first started collecting in the Sudan about 13 years ago Mr. Kinnear said to me " I wish you could get us a specimen of Schlegel's Francolin ". I have only just succeeded. Repeated enquiries and searches in the Bahr-el-Ghazal brought no light on the problem, nor was I able to identify the type-locality. With the end of the war I started my search once again, and when I came home on leave in 1946 I studied the literature both in the Bird Room and at the Royal Geographical Society. The Sudan Survey Department in Khartoum also contributed to the final success by consulting old maps in their possession.

Type Locality.

Von Heuglin gave as the type locality : Bongo River, Bahr-el-Ghazal, and he dated his paper for the J. f. O. " April 1863 ". In a second paper published in the J. f. O. for 1864, he remarked on p. 274 in connection with this Francolin " found only in the steppe country between the Djur and Kosanga Rivers ". All that seemed necessary therefore was to identify these three rivers.

The Bongo might be the River Pongo, some 50 miles west of Wau, or it might be the river which flowed through the country of the Bongo tribe ; the latter seemed to be more likely, but it was not too easy to fix the exact location of the Bongo tribe in 1863.

The Djur River was easily identified as the present day River Jur on which is situated the small town of Wau.

The identification of the Kosanga River was more difficult. At length, however, I found an article in the 1941 issue of Sudan Notes and Records entitled " Travels in the Sudan in the Sixties ", being translations from Dr. Petermann's Mittheilungen ; and the parts which concern us are letters from von Heuglin to Petermann dated between July 1862 and January 1863, and in one of these he mentioned the travels of Johann Kleincznick. Very briefly Kleincznick landed at Meshra-er-Req in November 1861, and in January 1862 set off in a south-westerly direction, and after marching for seven days for about six hours a day he reached the River Djur, which at that point received a tributary from the west, the " Bahr Bongo ", and two days later after having crossed the Djur he came to another tributary the " Kosanga ". Now, the paper in which von Heuglin described *Francolinus schlegelii* was dated April 1863 ; and it is an important and significant fact that according to the map in Petermann's Mittheilungen, Dr. Steudner, a member of von Heuglin's party, died at Wau on April 10. It seems clear, therefore, that the party was delayed at Wau due to Dr. Steudner's illness, that von Heuglin probably wandered about collecting within a day or two's journey of

the place, that he wrote up his notes on the birds obtained to date, and that they were sent back with the notification of Steudner's demise. The Wau of those days was a little south and west of the present day Wau. It is clear, therefore, that the Bongo River must be reasonably close to Wau.

At the Royal Geographical Society there is an old map on which Kleincznick's route is clearly shown, but on trying to fix his positions to a modern map they come out west of the River Pongo, which however is 50 miles from the Jur ; but Kleincznick had only marched two days from the Djur before reaching the Kosanga, so that I came to the conclusion that the Kosanga could not be further west than the Pongo.

The Survey Department in Khartoum also worked out that Kleincznick's journey from Meshra would have brought him to the River Djur very close to the point where the modern Bussere River joins it. They also found on an old War Office map of 1883 a hill named Kosanga which they placed on a modern map as just west of the Pongo River on the road from Wau to Raga.

From all this I came to the conclusion that the Bongo River is identical with the modern Bussere River, and the Kosanga River is identical with the modern Pongo River. Therefore the type locality of *F. schlegelii* must be the Bussere River, probably about one day's march, say 15–20 miles, upstream from its junction with the Jur River.

The Search.

Before returning to the Sudan in November 1946 I suggested to Mr. J. D. Macdonald that if I could hand out photographs of the bird to natives of the Bahr-el-Ghazal I thought there would be a good chance of success. Mr. Macdonald went further and very kindly arranged to have the picture in the Bird Room photographed, and enlarged up to life size. This is the picture which appears in Volume 1 of Dr. D. A. Bannerman's ' Birds of Tropical West Africa.' I took a number of these photographs back with me and gave them, for distribution, to Mr. T. R. H. Owen, the Deputy Governor at Wau, who has taken the greatest interest in the problem and has given me every help in my search. Amongst others I suggested that he should send copies to the Mission at Bussere, about 15 miles south of Wau, and to the Mission at Mboro, about 25 miles south-west of Wau. Within a month the first specimen, a male, had been obtained about 10 miles south-west of Mboro, and I had the satisfaction of sending it off by air to the Bird Room on Christmas Day. Since then eight more specimens have been obtained from the same locality, making a total in all of six males and three females.

I am indebted to Fr. Toniolo of Mboro Mission for his energy in stimulating the interest of the natives of this area to find the bird. I am also indebted to him for the following information which he has obtained from them. The name for the Francolin in Ndogo is " Mbakda " and it is to be found in the wooded ironstone country about 10–15 miles south-west of Mboro, and in association with the tree, known in Ndogo as " Ka " (*Isoberlinia doka*). They go about in pairs, and often mix with other francolins (? *F. icterorhynchus*). The call is said to be " Korrr-korrr-korrr " which they utter at dusk, and their food is from the grain crops " durra " and " telebun ". They are said to lay ten or more eggs in a hollow in the ground, and they often cover them with leaves, and the eggs are said to be hatched about October. My own enquiries very much bear out the above, but my informants state that only two or three eggs are laid and that the breeding season is about April or May. I also ascertained that their food is supposed to consist of grass seeds, gravel, and caterpillars found on the leaves of the " Ka " tree. It is evidently a shy bird which lives well away from human habitations, and it is not often seen by day. The Banded Francolin is sometimes known as Di-ka, meaning the Francolin of the " Ka " tree.

Method of Capture.

The method of catching the Banded Francolin is of considerable interest. Apparently they are so difficult to come by during the day that they are hunted and caught at night. During the daytime the hunter will have found the places where they scratch about and bath themselves in the dust; then at about sunset he places himself nearby and listens for the soft call of " Korrr-korrr-korrr "; very gently he approaches and waits until it is nearly dark when they begin to make a contented sort of " sii-sii-sii " as they settle down for the night close up against a " Ka " tree. The hunter notes the particular trees under which they are sleeping and then withdraws. Later in the night he sets forth again with a flaming torch of grass, and, holding this on high, he stalks very slowly up to where they are lying, and with his other hand very slowly lowers a basket, about a foot across, which he puts down on top of them. My skinner took part in some of these stalks and states that the hunter is successful in about 50 per cent. of his attempts. He stated that he saw many of these francolins by night, but never by day; whilst sleeping there would sometimes be two huddled together, and others a little further apart, but always in close proximity to the " Ka " tree. The Ndogo natives catch the birds to eat them, and my skinner ascertained from them that the method of capture has been handed down for

several generations. According to my skinner, he marched for two hours south-west from Mboro until he came to a khor named Māgilla, which is one of the headwaters of the river Getti. The haunts of the Banded Francolin are another two hours beyond this Khor Māgilla.

Systematic Position.

I am indebted to Mr. J. D. Macdonald for examining specimens and for giving me the following notes.

Lack of sufficient material has hindered the satisfactory determination of the relationships of the Banded Francolin. Authorities have been divided as to whether it should be regarded as a distinct species or as a race of *Francolinus coqui* (Smith). They are somewhat similar in colour pattern, though *F. coqui* is distinctly larger. But the most striking difference is in the extent of sexual dimorphism. *F. coqui* is distinguished among francolins by the rather unusual degree to which the female differs from the male. In the Banded Francolin the difference is very slight, and is most noticeable, apart from the presence or absence of spurs, in the markings of the feathers of the breast; in the male narrow black bars lie transversely across the feathers giving a general appearance of alternate black and buffish-grey concentric rings; in the female the outer black line follows the periphery of each feather, especially in those close to the neck, so that in the general appearance the lines are broken up and present a much less regular pattern.

It was a matter of some interest to compare topotypical birds with those from Bozum, which lies about 800 miles due west. This has been made possible through the courtesy of M. Berlioz, who kindly sent on loan to the British Museum one of the males in the Paris museum. Within the limits of what could be regarded as individual variation the males are identical.

The Banded Francolin can therefore be regarded as a distinct species, *Francolinus schlegelii*, with distribution in the vicinity of Mboro, south-west of Wau, Bahr-el-Ghazel, and the vicinity of Bozum, F.E.A. Whether or not it exists in between these localities is a matter still to be determined.

A new Species of Weaver from Uganda.

Capt. C. H. B. Grant and Mr. C. W. Mackworth-Praed exhibited and described the following :—

Ploceus spekeoides, new species.

Description.—The adult male is similar to *Ploceus spekei* (Heuglin) but has a shorter wing and shorter tail. The adult female differs from

the female of *P. spekei* in being below wholly yellow, lower rump and upper tail-coverts yellow ; malar stripe blackish, bill black.

Distribution.—Only known from Teso, central Uganda.

Type.—In the British Museum. Adult male. Ngariam, Teso, central Uganda, July 30, 1913. Collected by T. V. Fox, for Col. S. R. Clarke. Brit. Mus. Reg. no. 1923.8.7.2128.

Measurements of type.—Wing 76, culmen from base 21, tail 39, tarsus 22 mm.

Remarks.—Only two specimens known and are in worn dress, but have not yet started to moult. The male has a bill equal in size to that of *P. spekei*. The female is quite distinct from that of *P. spekei* and is without doubt in breeding dress and would appear to show that it would have a different dress in the non-breeding season. If so the male also would be expected to have a non-breeding dress. *P. spekei* has no non-breeding dress in either sex. The female measures, wing 71 ; culmen from base 21 ; tail 37 ; tarsus 21 mm., and was taken at Usuku, Teso, on August 14, 1913, by the same collector. Wings of males of *P. spekei* measure 81–89, and females 76–85 mm. ; tails : males 44–52, females 41–48 mm. Although *P. spekei* is not known to occur in Uganda, the distinctions above indicated are too great to admit of this bird being a race of it, and indicate at least specific rank. Owing ,however, to its very great resemblance to that species we have thought it best to call it by the above name.

A new Race of Apalis from Tanganyika Territory.

Capt. C. H. B. Grant and Mr. C. W. Mackworth-Praed exhibited and described the following :—

Apalis melanocephala songeaensis, new race.

Description.—Above similar to *Apalis melanocephala tenebricosa* Vincent, but below lighter without the dusky wash on the flanks and lower belly ; tail as in *Apalis melanocephala muhuluensis* Grant & Praed, but white ends broader.

Distribution.—Only known from the type locality.

Type.—In the British Museum. Adult male. Sexual organs rather, enlarged, Luwiri–Kitessa Forest, Songea district, southern Tanganyika Territory. August 17, 1946. Collected for R. E. Moreau, by Charles Abdallah. Brit. Mus. Reg. no. 1947.10.1.

Measurements of type.—Wing 52, culmen from base 15, tail 76, tarsus 18 mm.

Remarks.—Another male, given as in full breeding condition has the mantle and rump washed with olivaceous, but otherwise agrees with the type. Wing 52 mm.

New Races of Larks from Abyssinia and Kenya Colony and a new Race of Scaley Chatterer from Abyssinia.

Mr. C. W. Benson sent the following descriptions with specimens for exhibition :—

Æthocorys personata yavelloensis, new race.

Description.—Differs from *Æthocorys personata personata* Sharpe, in being much darker above, greyer and with blacker central feather-markings ; below very similar to the nominate race, but chest rather greyer. From *Æthocorys personata intensa* Rothschild it differs in being much colder and greyer in tone.

Distribution.—The Yavello area of southern Abyssinia.

Type.—In the British Museum. Adult male. Ten miles west of Yavello, southern Abyssinia. July 23, 1941. Collected by C. W. Benson. Collector's no. E.482. Brit. Mus. Reg. no. 1946.5.2056.

Measurements of type.—Wing 85, culmen from base 16, tail 50, tarsus 19 mm.

Remarks.—Two other adult specimens from the same locality have the wing in the male 85, and the female 85 mm. They were all obtained on open bare ground, and for further details see Ibis, 1946, p. 40. I thank Miss G. M. Rhodes and Messrs. Mackworth-Praed and Grant for comparing this new race with *Æ. p. personata.*

Galerida theklæ huriensis, new race.

Description.—Above similar to the dark phace of *Galerida theklæ prætermissa* (Blanford), but below whiter much less buff, showing the spots on neck to breast sharper and clearer.

Distribution.—The Huri Hills, northern Kenya Colony.

Type.—In the British Museum. Adult male. Five miles south of the Abyssinia–Kenya Colony border, in the Huri Hills, between Mega and Marsabit, 3000 feet. April 1, 1942. Collected by C. W. Benson. Collector's no. 2437. Brit. Mus. no. 1946.5.2057.

Measurements of type.—Wing 100, culmen from base 19, tail 60, tarsus 25 mm.

Remarks.—Five other specimens of this new race are in the British Museum collection and agree with the type. See Ibis, 1945, p. 92, under *Gallisda theklæ ellioti* ? Koroli–Marsabit birds probably also belong to this

race. I thank Miss G. M. Rhodes and Messrs. Mackworth-Praed and Grant for drawing my attention to this new race.

ARGYA AYLMERI BORANENSIS, new race.

Description.—Above similar to *Argya aylmeri mentalis* Reichenow, below feathers of chin and throat with blacker centres ; breast to belly more russet brown. It is altogether darker, less russet above than *Argya aylmeri keniana* Jackson, and darker both above and below than *Argya aylmeri aylmeri* Shelley.

Distribution.—The Boran area of southern Abyssinia to the headwaters of the Webi Shebeli.

Type.—In the British Museum. Adult male. Ten miles south of Yavello, southern Abyssinia. August 6, 1941. Collected by C. W. Benson Collector's no. E.598. Brit. Mus. Reg. no. 1946.5.2055.

Measurements of type.—Wing 75, culmen from base 20, tail 115, tarsus 25 mm.

Remarks.—Five other specimens, in the British Museum, recorded with the type, Ibis, 1946, p. 45 as *A. a. aylmeri*, have wings 73 to 78 mm., and one collected by Dr. A. Donaldson Smith at the Webi River, southern Abyssinia, has a wing of 72 mm. I thank Miss G. M. Rhodes and Messrs. Mackworth-Praed and Grant for drawing my attention to this new race.

A new Race of Cisticola from Tanganyika Territory.

Mr. H. I. F. ELLIOTT sent the following description and specimens for exhibition :—

CISTICOLA HUNTERI HYPERNEPHELA, new race.

Description.—Differs from the three races accepted by Lynes as follows : from *C. h. hunteri* Shelley of Kilimanjaro, in having the upper side rather more heavily mottled and the under parts much paler, never as grey as even the lowest level Mt. Kilimanjaro birds ; from *C. h. prinioides* Neumann of Mau, Kenya Colony Highlands, in the grey tone and heavy mottling of the upper side, though the under parts are very similar ; from *C. h. masaba* Lynes of Mt. Elgon, in having a mottled not plain upper side and paler under parts.

Distribution.—The Crater Highlands, northern Tanganyika Territory, south-west of Lake Natron, from 7500 to 11,500 feet.

Type.—In the British Museum. Adult male. Olosirwa Mt., Crater Highlands, 10,950 feet. January 27, 1945. Collected by H. F. I. Elliott. Collector's no. 667. Brit. Mus. Reg. no. 1947.71.1.

Measurements of type.—Wing 63, culmen from base 11, tail 68, tarsus 22, middle toe and claw 18 mm.

Remarks.—Besides the type, the series collected includes a male with wing 61, a female wing 56 and a juvenile male wing 58 mm. In addition the British Museum has five skins referable to this new race, two males from the south-western lip of Ngorongoro, 7800 feet, and a male from the north side of Oldeani Mt., 10,000 feet, collected by R. E. Moreau, and a male from the southern lip of Ngorongoro, 8000 feet, and a female from Embagai crater, 7500 feet, collected by E. G. Rowe. These birds are in moult and were placed by Lynes with *C. h. prinioides*, though he remarks on the label " paler than average ". This apparent paleness is due to the contrast of the feather-edges with the dark feather-centres and the greyer, *C. h. hunteri*-like, tone, and this difference from matrix *C. h. prinioides* is very marked in birds in fresh plumage.

The name given to this race indicates that it is confined to the area above the persistent cloud level. *C. h. prinioides* occurs at much lower levels on neighbouring mountains, and the Mt. Kilimanjaro *C. h. hunteri* also ranges well below the cloud belt.

A new Race of Serin from the Belgian Congo.

Mr. C. M. N. White exhibited and described the following :—

Serinus mozambicus samaliyæ, new race.

Differs from *S. m. mozambicus* (Linnæus) and *S. m. tando* Bannerman in being much clearer and more bright green on the upper side, especially on the crown, and with the dark feather-centres less pronounced.

Distribution.—The Mwinilunga district of Northern Rhodesia and the southern Belgian Congo east to the Luapula River opposite Kasenga.

Type.—In British Museum. Adult male. Pempele Pool, between Musonoie and Solwezi, in the southern Belgian Congo. May 2, 1939. Collected by C. M. N. White. Brit. Mus. Reg. no. 1947.80.33.

Remarks.—Fourteen examples examined (twelve in my collection and two already in the British Museum). This new race is an unexpected discovery. *S. m. tando* appears to range from northern Angola to the Kasai drainage in the inner Congo basin. Capt. C. H. B. Grant has examined these specimens with me and agrees that they must be separated. They evidently represent the race of the outer Congo basin.

A new Race of the Skylark from the Outer Hebrides.

Mr. P. A. Clancey sent the following description with specimens for exhibition :—

In Bull. B. O. C. 66, 1946, p. 90, I indicated that the Skylark of the Outer Hebrides would doubtless prove to be distinct, and a critical perusal

of a series collected on the island of South Uist in June, 1947, in conjunction with material from all parts of Britain, confirms my earlier supposition.

ALAUDA ARVENSIS DIVERGENS, new race.

Description.—Male and female, breeding. Upper-parts without the warm tones of *Alauda arvensis scotica* Tschusi, 1903 : Kirkcudbrightshire, south-west Scotland, feather-centres being blacker and more fully developed ; under-parts whiter ; breast spots and flank streaks blacker, not so brown. Autumn. Upper-parts colder and more earthen in tone than in *A. a. scotica* ; wings and tail darker ; under-parts rather whiter, with breast spots and flank streaks blacker. Juvenile. Much darker and richer in tone above than in *A. a. scotica* ; under-parts little different, but breast spots rather larger and flanks somewhat darker.

Distribution.—Confined to the islands of the Outer Hebridean group.

Type.—Adult male. In my collection. Breeding. Daliburgh, South Uist, Outer Hebrides. June 17, 1947.

Measurements of the type.—Wing 111, culmen from base 16, tarsus 26·5, tail 72 mm.

Material examined.—*A. a. divergens,* six males, three females, two young. *A. a. scotica,* long series from many parts of Scotland and northern districts of England. *Alauda arvensis tertialis* Clancey, 1946 : Salisbury Plain, England, series. *Alauda arvensis theresæ* Meinertzhagen, 1947 : Co. Clare, Ireland, series. *Alauda arvensis arvensis* Linnæus, 1758 : Sweden, series.

Remarks.—This new race of *A. arvensis* in its less rufous plumage stands noticeably apart from its affinities, *A. a. scotica*, *A. a. tertialis*, *A. a. theresæ*, which form a closely integrated association of British main island races. Examination of series in comparable plumages from the Shetland and Orkney groups is now clearly required in order to ascertain the status of the races inhabiting these islands.

A single female in partial new plumage has enabled me to describe this dress in the face of an almost complete absence of autumn taken Outer Hebridean specimens. Col. R. Meinertzhagen, D.S.O., informs me *in litt.*, that during the late autumn and winter months the indigenous Skylarks are absent from the Outer Hebrides, which presumably accounts for the fact that this highly distinctive form has hitherto escaped notice.

I am indebted to Dr. J. M. Harrison, D.S.C., for supplying details of South Uist Skylarks in his collection.

The Effect of Diet on Plumage Pigmentation.

Col. R. Meinertzhagen made the following remarks :—

Gloger's Rule that in warm or humid regions there is increased pigmentation in feathers of birds and that in desert or arid regions there is a decrease in pigmentation, gives us the result of some process but not the cause. It has been generally accepted that the survival value of this rule is obvious. Mayr, in his exceptional work ' Systematics and the Origin of Species,' p. 246, remarks, " Habitat selection is unquestionably involved in the development of bird races that are adapted to specific soil colours." In many cases the close resemblance between the colour of the soil and the colour of the plumage is extremely close, especially among larks, and both Niethammer and I have remarked on the reluctance which many larks display to leave the particular soil which their plumage resembles in such countries so distant as Arabia and South West Africa. But there are objections to the survival theory.

The western Himalayas are not so humid as the eastern Himalayas and yet many races are darker in the east than in the west, both living in forest where a very slight colour difference could not have survival value. Again, the Outer Hebrides and western Ireland are more humid than East Anglia and yet we find darker skylarks, corn buntings, rock pipits, thrushes and other birds in the west than in the east. The differences in pigmentation are very small and I cannot believe that they have any survival value. Moreover, continental (grey) skylarks spend half their lives in the British Islands where a slightly redder race resides, and I cannot believe that they are at a disadvantage.

If we examine the extreme case of desert coloration, its cause is baffling. It cannot be that climate (phenotypical) influences pigmentation, because two races of *Ammomanes* live within a few miles of each other in identical climate, humidity and conditions, the one being almost black and living on black lava and the other being pale isabelline and living on yellow sand.

It has been remarked that correlation between soil and pigmentation is most marked among those birds which are most liable to attack by predatory birds. No birds could be more vulnerable to attack by predators than those which live in deserts ; but having travelled and lived in the deserts of Africa and Asia for many, many months, I have never once seen a predatory bird hunting in pure desert which abounds with several species of lark, chat and warbler. One sees the larger raptores but they do not molest small birds. One occasionally sees falcons, but they only take on the wing when adaptive coloration does not function

Kestrels are rarely seen in the desert and constitute no menace to small birds who, knowing the kestrel's habits, have only to take wing and be safe. Harriers and merlin cross the desert on passage but never hunt. And if attack by predators is the selective cause of desert coloration, why is the desert eagle owl desert-coloured ? And why should *Spalax*, a small desert mammal living underground, be desert coloured ?

It is significant that the indigenous sheep of Ushant were black, the indigenous cattle of Co. Kerry are black and the indigenous strain of Highland Cattle in the Outer Hebrides were black ; and these particular localities are the most humid regions of France, Ireland and Scotland respectively. Sabine's Snipe only occurs in the wettest parts of the range of the snipe (though it has once occurred in Denmark) ; the black leopard only occurs in the most humid parts of the leopard's habitat. It is remarkable that the dark mutant of the pheasant should have originated in the most humid area of the pheasant's distribution from Japan to Britain and that the Versicolor Pheasant, which closely resembles the British dark mutant, should have established itself in the most humid area of Japan. In all these cases protection from predators can play no part in the cause of Gloger's Rule.

Mayr, *op. cit.* p. 88, comes to no definite conclusion when discussing desert coloration. He states " We must rather assume that the inheritance of the degree and kind of pigmentation is correlated with some organ (let us say the thyroid or pituitary), the variation of which is of selective value "—a statement which gets us no further.

Some years ago I was inclined to think that the percentage of ultra-violet rays which get through the atmosphere might influence pigmentation. Humidity is the strongest filter for these rays and there is much evidence to support this view, but desert coloration is fixed, so far as anything in Nature is fixed, and is heritable, that is to say has a genetic basis, as has been proved by experiment. On the other hand, we have Beebe's famous experiment which under laboratory conditions produced increased pigmentation by subjecting birds to darkness and increased humidity ; but this experiment has not been confirmed.

So the matter stands and we are still completely ignorant of the causes of increase and decrease in pigmentation according to Gloger's Rule.

In any given area, food is the main factor of existence and the only common factor influencing all life within that area. Food, whether animal or vegetable, is derived from the soil. Can it be that diet causes specific variation among birds ?

I am not going to touch on the chemistry of pigment ; it is a complicated subject and I am not a bio-chemist. What I am concerned with

is the relationship between pigment taken with food, and pigment come to rest in the feather. Once a feather is mature it is sealed off at the base of the calamus and isolated from the blood-stream ; but when growing it gains nourishment from the blood-stream and will naturally obtain any pigment derived from diet. It is therefore only previous to and during moult that pigment taken in diet could influence the pigmentation of the feather. It is therefore important to know a bird's diet previous to and during moult and this does not always tally with a bird's diet during the rest of the year. For instance, the bramble-finch (*Fringilla montifringilla* Linnæus), normally a regular seed-eater, does, in the moulting season (September) in Swedish Lapland and probably elsewhere throughout its range, feed entirely on soft fruit, mostly *Vaccinium* and *Rubus*, this probably accounting for its name. This conservative diet during moult would account for lack of intraspecific variation throughout its range from Norway to Kamtskatka. But here again there is a complication.

Assuming that all domestic cattle were derived from one species and all domestic poultry were similarly derived, man, by artificial selection has been able to produce breeds which can absorb into their fat pigment derived from food and others which do not do so. Among cattle, breed exerts a stronger influence on fat-colour than any other factor. The colour of butter-fat is closely allied to body-fat. But the most important factor influencing fat-colour is diet. These facts have been abundantly proved for cattle and rabbits. Among poultry, similar facts have been proved. But in poultry, breed determines the colour of the yolk of the egg in addition to body-fat. In Britain we prefer hens which lay eggs with dark yolks, in America the pale yolk is preferred ; poultry breeders have therefore concentrated on those breeds which supply these national preferences. In poultry it has also been proved that diet affects the colour of the body-fat. I mention this to show that there is a potential within a species to utilise or reject pigment derived from diet.

We now come to experiments on birds in captivity. Canaries fed on food free from carotenoids previous to and during moult, turn white. Others, when fed on paprika, especially if taken in a fatty or oily medium such as olive oil, turn orange. Bullfinches fed on hemp become much darker after moult, and if at the next moult their diet is free of hemp they become normal. I realise that these two cases involve food unnatural to canaries and bullfinches, but it does demonstrate the fact that pigment taken in diet does in fact influence pigmentation of the feather. Flamingoes in the Giza Zoological Gardens lost almost all rosy colour on a non-crustacean diet, recovering the rosy colour after

the next moult which followed a crustacean diet. In the New York Zoo, rosy flamingoes after successive moults became almost pure white until a harmless red dye was mixed with their food, when they recovered their normal rosy colour. Such evidence further establishes the fact that pigment taken in diet affects the colour pigment in the feather, but, unfortunately, no record has been kept of the colour of the fat among these captivity birds.

I have, however, been able to establish a direct relationship between the colour of the fat of wild birds and the colours of the soft parts. The chough (*Pyrrhocorax pyrrhocorax*) with his brilliant scarlet bill and legs has a coral-red body-fat. The rook (*Corvus frugilegus*), jackdaw (*C. monedula*), raven (*C. corax*), magpie (*Pica pica*) and jay (*Garrulus glandarius*) without any reds or yellows in the soft parts, have a yellowish-white fat. In the gulls where the insides of the mouths, the bill or legs are red or orange, the body-fat is orange, whereas in those gulls with pinkish or whitish insides of mouths and greenish or flesh-coloured legs, the body-fat is dirty white. In the black guillemot (*Uria grylle*) with his scarlet bill, legs and inside of mouth, the fat is orange, in the puffin (*Fratercula arctica*) with the various reds and yellows in the bill, the body-fat is orange, but in the common guillemot (*Uria aalge*) and the razorbill (*Alca torda*) without any reds or yellows, the body-fat is whitish. The remarkable aspect of the black guillemot is that the adult with his red soft parts and orange fat had stomach contents of red crabs, the juice from which had stained the lining of the stomach, intestines and fæces bright orange ; but four immature black guillemots with black bill and uncoloured legs and insides to mouth, had a stomach content of small white fish and marine mollusca without a trace of red stain and the fat was whitish. The oystercatcher (*Hæmatopus ostralegus*) with his scarlet bill in adults has an orange fat, but immature birds with their blackish bills have a much duller yellowish fat. The redshank (*Tringa totanus*) with his red legs has a deep yellow fat, but such waders as the knot (*Erolia canutus*) and dunlin (*Erolia alpina*) without red legs have a dull pale yellow fat. In view of these facts it looks as though, in the majority of cases, the colour of the soft parts is reflected in the body-fat. But conversely there are many cases where the colour of body-fat is not reflected in the soft parts owing to the potential to lay down the colour pigment being absent.

It is possible that diet is responsible for the change in colour of the bill in spring in such birds as the black-headed gull (*Larus ridibundus*), the starling (*Sturnus vulgaris*) and others.

The relationship between fat-colour and plumage is more subtle, but among some birds I have found that it can be established. I must stress

the point that I am only dealing with intraspecific speciation. It would be clearly absurd to claim that diet could influence the differences between even closely related species such as the linnet (*Acanthis cannabina*) and the twite (*Acanthis flavirostris*). I am only dealing with the colour differences within a species. The evidence I have is fragmentary but consistent.

A very dark Hebridean thrush (*Turdus philomelos hebridensis*) had body-fat many shades darker than that of Scandinavian thrushes. West of Ireland meadow pipits (*Anthus pratensis*), if they are particularly dark individuals, have a much darker body-fat than paler birds. The Swedish snipe (*Capella gallinago*) is a darker bird than the Iceland snipe (*C. g. faeroensis*) and has a darker fat. The Shetland starling (*Sturnus vulgaris zetlandicus*) has a dark juvenile plumage; other European starlings have a paler juvenile plumage. The former feeds almost entirely on food derived from sea-weed, the latter is a crop-land bird. The fat of the Shetland bird is slightly darker than that of Swedish birds. The adult could scarcely react to dark pigment being already black, though in most cases the white spotting in freshly-moulted adults of the Shetland race is more restricted than is usual in Swedish birds. Here again, I can see no possible advantage against predators which could be enjoyed by Shetland birds by virtue of dark coloration.

In this connection, I believe it to be true that the more conservative a species is in its ecology and therefore in its diet, the less intraspecific variation is manifest; in other words, the less variable the diet the less variable the plumage. One could quote many instances. The wall-creeper (*Tichodroma muraria*) with its conservative ecology and no variation and the tree-creeper (*Certhia*) with varied ecology and much intraspecific variation. Other cases that come to mind are the grey wagtail (*Motacilla cinerea*) and the yellow wagtails (*M. flava*); the *Larus argentatus-L. fuscus* group and the common and black-headed gulls (*L. canus* and *L. ridibundus*); the siskin (*Caduelis spinus*) and the goldfinch (*Carduelis carduelis*); the short-eared owl (*Asio flammea*) and the little owl (*Athene*); *Rhamphocorys* and *Galerida*.

I have already remarked elsewhere that ground-feeding brids such as sandgrouse and larks, show greater variation within the species than do tree-feeding birds; I believe the reason of this to be that ground-feeding birds have a greater variety of diet. I have noted this especially among the larks, the hedge-sparrows and robins. And to complicate the subject still more, I have found on several occasions that individual birds have individual likes and dislikes. I have come across this in the hedge-sparrow, where the male would never touch seeds and the female consumed them greedily up to one-third of the total stomach content.

I have also come across it in the skylark, where some individuals will eat nothing but green food and insects, whilst others will eat a large variety of seeds.

I appreciate the fragmentary nature of the evidence I have collected and am not claiming anything extravagant; I merely put the facts and my views before you, uncertain myself whether there is an element of truth in them or not.

I would finally suggest that there is a food cline and therefore a pigment cline which is reflected in the bird's plumage. If this is so, are these variations due to diet valid subspecies? Have they a genetic basis? Mayr does not admit phenotypical races as valid subspecies. What of sitotypical races—those which typify variation due to pigment derived from diet?

This paper caused some discussion by several Members.

Some Notes and Comments on sixteen British Species.

Col. R. Meinertzhagen communicated the following :—

I should like to preface these notes with the following quotation from Mayr, ' Systematics and the Origin of Species,' p. 16.

" Only such subspecies or species should be named as are really distinct from others. This admonition may sound superfluous, but if it were so we would not have so many synonyms for most of our species. . . . The author of a new name should always keep in mind Bather's true words ' A name once published is irrevocable, a permanent addition to the labour of future investigators. Let us beware of adding needlessly to the burden of posterity '. The quality of a taxonomist's work is measured not so much by the number of new forms which he describes as by the percentage of synonyms among them."

On the forms of *Garrulus glandarius* Linnæus from western Europe.

The type of *G. g. rufitergum* Hartert is an adult male shot by the late Lord Rothschild on October 21, 1895. It is in the British Museum where I have examined it. The upper parts are pale terra-cotta without a trace of grey and it is unlike any British-taken specimen I have seen, being paler and redder and can only be matched by very few German birds. It must have been quite unlike the series which Hartert had before him in 1903 when he described it. Being an October bird we cannot be sure that it is a Brtish breeding bird. At the time when Hartert described the British Jay, the Irish Jay had not yet been described, and I know that Hartert had several Irish specimens before him in 1903. No doubt this largely influenced the series he had before him.

I have examined eleven breeding birds in the British Museum from the south of England (Suffolk to Hereford), from Cornwall, Cumberland and south Scotland. I also have in my collection seven breeding birds from Tring. A few are darker than others and these few agree with Hartert's description of the British form, but in the main they agree perfectly with a large German, Swiss, north Italian, Dutch, Belgian and French series, some of these, especially Swiss birds, being as dark as the darkest British birds. I therefore unite the British Jay with the German Jay, the oldest name for which appears to be *Glandarius germanicus* Brehm, Handb. Naturg. Vög. Deutschl. p. 180, 1831. There is no doubt that Brehm had before him German breeding birds, for on the same page he distinguishes the Scandinavian form from the German bird. Koch's name *Glandarius pictus* (1816–Bavaria) is an older name but can scarcely be accepted, as he merely renamed Linnæus's *Garrulus glandarius* in order to avoid the ugly combination " *Glandarius glandarius* ".

The Irish Jay (*G. g. hibernicus* Witherby & Hartert. 1911, Ireland) is a good race, being darker and more richly coloured above and below. Some west of England birds come very near it, a male from Cornwall in my collection exactly matching a series from Ireland.

On the Starling (British race) *Sturnus vulgaris britannicus* Bullough.

Description.—Like *Sturnus vulgaris vulgaris* Linnæus during the breeding season, but otherwise with gonads not regressing so far in summer and starting their seasonal growth in September instead of in January. Because of this, the beaks of adults *S. v. britannicus* begin to turn yellow in late October and early November (the change does not begin until January or February in adult *S. v. vulgaris*) ; the birds pay repeated visits to their nest holes and so rub the white tips from their throat and neck feathers (no similar behaviour or change is seen in *S. v. vulgaris*) ; and they are non-migratory (unlike *S. v. vulgaris*).

Distribution.—Throughout the British Isles where, apart from the local *S. v. zetlandicus*, it is the only breeding race ; probably also throughout the western European countries where it breeds alongside *S. v. vulgaris* ; and in eastern Canada and the eastern United States where it also breeds alongside *S. v. vulgaris*.

Type.—From North Deighton, near Wetherby, Yorkshire ; shot December 9, 1939 from a communal roost ; numbered 35B.m.B., and preserved in the museum of the Zoology Department of Leeds University.

Remarks.—For full comparative details and figures of gonad sizes throughout the year, of secondary sexual characters, and of behaviour see W. S. Bullough (1942) in the 'Philosophical Transactions of the Royal Society of London' B 231, pp. 165–246, and (1942) in the Ibis, pp. 225–239.

Since the features by which this race has been distinguished vary with the seasons, an attempt has been made to find some constant distinguishing feature which would be useful for taxonomists. Col. R. Meinertzhagen suggests that the head of *S. v. britannicus* is less purple, and on the average this certainly seems to be so. There may, however, be individual variation from the average, and further observation appears to be necessary.

On *Sturnus vulgaris* Linnæus.

Linnæus described the Starling without any diagnosis which would enable the race to be determined. Hartert restricts the type locality to Sweden ; I further restrict it to Upsala, whence I have in my collection seven breeding males and seven September adults. I have also examined the large series of Swedish birds in the Stockholm Museum. I also have before me a large series of British and Irish breeding birds.

Starlings are most difficult to determine, as different people will often come to different conclusions on colour with the same series and even the same person, as I have found myself, will see things differently from week to week with the same specimens.

Upsala birds are by no means constant in the colour of the mantle, head and ear-coverts ; not nearly so constant as are British and Dutch breeding birds. These latter must bear the name *Sturnus vulgaris britannicus* Bullough on those physiological characters given by Bullough and also on the excellent morphological characters given by Witherby in the Handbook which exactly fits the British race.

The vast majority of Upsala birds have seome degree of purple or a purple wash on the head, the ear-coverts though green are not pure green as in the British form, but oily green and rarely purplish green, and the mantle is often less bronze and more green than the British race.* It seems desirable to fix the Upsala bird. I therefore make a Neotype of *Sturnus vulgaris*, adult male, Upsala, Sweden, April 18, 1897, this specimen agreeing with the majority of Upsala birds examined.

Do purple-headed birds breed in Britain ? I have one purple-headed bird obtained in April when all continental migrants should have left this country, but I have no proof that it was actually breeding. All known breeding birds from the British Islands which I have examined agree with Bullough's and Witherby's diagnoses. Purple-headed birds, clearly migrants from northern Europe, occur frequently in the British Islands in autumn, winter and early spring but I have yet to see one from Ireland.

* This is at variance with Pateff (' The Ibis ', 1947, pp. 496–7), who finds Swedish birds have a " completely green head " and that a " purplish gloss on head " is " rare in Sweden ". I cannot explain this complete disagreement with the ample material I have had before me.

Sturnus hollandiæ Brehm (1831, Holland). The type is in the Brehm Collection and should now be in New York. It is a May bird from Holland (Novit. Zool. xxv. 1918, p. 10). Dutch birds, of which I have several spring specimens from Rotterdam, do not differ from British birds on morphological characters, never having the purplish head.

On the western European forms of *Chloris chloris* Linnæus.

I have had before me the series in the Stockholm, Helsingfors, Berlin and Leyden Museums and the following :—

15 topotypical *Chloris chloris harrisoni* Clancey.
14 topotypical *Chloris chloris restricta* Clancey.
18 from eastern Scotland in my collection.
12 *Chloris chloris chloris* L. from Upsala. My collection.
2 Finland birds. My collection.
2 Estonian birds. My collection.
20 South of England from Norfolk to Cornwall. My collection.
1 from Wales. My collection.
5 from extreme west Ireland. My collection.

Individual variation is great among any greenfinches from any locality. It is not dimorphism as suggested by Clancey but strict individual variation.

C. c. harrisoni Clancey is slightly darker above than all Swedish birds and a few Scottish, English and Irish birds. The under parts are, however, much darker than in Swedish birds, most distinct in a series, and the form is perfectly good.

Birds from east Scotland are *C. chloris*, *C. c. harrisoni*, a few being identical with either form. A single bird from Wales is identical with *C. c. chloris* above and with *C. c. harrisoni* below. All English birds examined, including the series of *C. c. restricta*, are nearest Swedish specimens, a few slightly darker above, but seldom so pale below. On the other hand, several English specimens cannot be separated from *C. c. chloris*. Cornish birds form a group by themselves, being very bright yellow below and approaching *C. c. aurantiiventris* (Cab.). West Irish birds seem to be as English birds.

I should therefore classify western European birds as follows :—

Chloris c. chloris. Sweden, Finland, Estonia. Winter visitor to the British Islands. Finnish birds are particularly pale below and with white lower belly.

Chloris c. harrisoni. South-west Scotland.

Chloris c. chloris *C. c. harrisoni*. East Scotland, England (except Cornwall) and Ireland.

Chloris c. harrisoni *C. c. aurantiivetris*. Cornwall.

I doubt whether *C. c. restricta* Clancey should be recognized. It is too inconstant and a pure intermediate, but such a decision must remain a matter of individual opinion. If it is recognized, its distribution would be most difficult to define and the Cornish bird would have to bear a name.

Two males from Rotterdam cannot be separated from English birds and are certainly not true *C. c. chloris*. The darkest bird I have seen is a male from Gottingen near Hanover (December 1, 1896). It is much darker than any specimen of *C. c. harrisoni*, the whole of the under parts being sulphur brownish green. It is not representative of German greenfinches which in the main resemble Swedish specimens.

On the western European forms of *Carduelis cannabina* (Linnæus.)

I have had before me the series in the Stockholm, Berlin and Leyden Museums.

The type and thirty specimens of *Carduelis cannabina sejuncta* (Clancey) from the Clancey collection.

The type and two specimens of *Carduelis cannabina autochtona* (Clancey) from the Clancey collection.

The following from my own collection :—

4 specimens from Upsala, Sweden.
7 specimens from West Scotland.
1 specimen from Co. Kerry which has been compared with the series in the Dublin Museum.
10 specimens from the south of England (Norfolk to Cornwall).
13 specimens from Ushant, all breeding birds.
2 specimens from the Pyrenees.

All series of the Linnet which I have examined are uneven showing no constancy. The darkest bird is an adult male (January) from Norfolk and this agrees perfectly with Clancey's *C. c. autochthona*. The characters claimed for the male of *C. c. sejuncta* are not apparent, nine adult spring males of the latter form having no striæ at all on the mantle. The palest birds of the whole series are two immature birds from Amesbury which agree exactly with birds in similar plumage from Upsala. And I cannot separate the type from Upsala females. I therefore regard *C. c. sejuncta* (Clancey) as a synonym of *C. c. cannabina*.

Clancey's three specimens of *C. c. autochtona* are certainly darker than is usual in British and continental linnets, heavily streaked on the mantle,

but they can be matched by south of England specimens. Before accepting this form I should like to see a series of birds in fresh plumage.

I cannot separate either Ushant nor Pyrennaean birds from Swedish specimens. Irish birds are very variable, mostly on the dark side and matching *C. c. autochthona*.

I think it would have been better to have drawn attention to a tendency to darkness and heavy mantle striation in some Scottish birds than to have given them a name, especially with such a small series, only one of which is in fresh plumage. Clancey infers that his *C. c. autochthona* occurs in the Orkneys. Two Orkney specimens in the British Museum are not linnets but twites *Carduelis flavirostris* (Linnæus), and have been content with wrong identification for nearly a century.

On the validity of *Pyrrhula pyrrhula wardlawi* Clancey.

I have examined fifteen specimens of Bullfinch from Sutherland and Ross-shire, together with over thirty from various parts of England and the series in the Berlin and Leyden Museums.

On bill measurement *P. p. wardlawi* shows an average smaller size, but there is a large overlap and many specimens could not be determined, though I admit my series is not so large as that examined by Clancey. I regard it as one of those cases where attention might have been called to such a slight character without over-burdening nomenclature. The colour characters claimed by Clancey for *P. p. wardlawi* do not exist in the specimens I have had before me.

Pyrrhula pyrrhula coccinea (Gmelin), scarcely differs from *P. p. nesa* Mathews, many of the latter, especially from East Anglia and Kent, showing not the slightest difference. In this I agree with Clancey (Ibis, 1946, p. 518).

Females in all bullfinches show greater variation than the males. I have examined twenty-one females from Kent (mainly from the Harrison collection) and they constitute an excellent synthetic race, due almost certainly to their close proximity to London.

Three Irish females in my collection are slightly richer and darker below than south of England birds, whilst one is much darker below and more vinous. A single Irish juvenile female is paler and yellower above and below than either British or Scottish juveniles of the same age.

This grime-belt theory is not entirely satisfactory. If I apply it to Kent bullfinches, why do not I apply it to south-west Scottish chaffinches ? The bullfinches seem to be affected in Kent and not in south-west Scotland; the chaffinches are affected in south-west Scotland and not in Kent. Almost the whole of south-east England and south-west Scotland is

within an industrial area and therefore grime-suspect. Should not all birds from these areas be thoroughly washed before preservation and if so, does washing, which cannot be done without some form of chemical, destroy the original colour? Over-washing might certainly entail over-bleaching. On the other hand, bullfinches are peculiarly susceptible during and preceding moult to the nature of their food which we know, from captive specimens, can affect the colour of the plumage.

On the western European forms of *Passer domesticus* Linnæus.

Witherby (Practical Handbook, 1, p. 157) does not recognize *Passer domesticus hostilis* Kleinschmidt (type-locality, Tring) basing his measurements on misleading material. He measured ninety males from Britain and compared them with fifty " continental " males, not with Swedish males. In order to gauge the validity of Kleinschmidt's race I examined the huge series in the Stockholm Museum with the following results :—

36 Swedish males have wings 77–82, once 83 mm.
36 Swedish females have wings 74–78, once 79 mm.
90 British males have wings 72–81 (Witherby).

I agree with Witherby that these differences are unworthy of a name. Birds from Finland are even larger, wings of males ranging to 85 mm.

The culmens are also important.

24 Finnish males have culmens 14–15 mm.
36 Swedish males have culmens 13·5–14·5 mm.
40 British males have culmens 12·5–14 mm.
8 Ushant males have culmens 12–12·5 mm.
10 West Irish males have culmens 12·5–13·5 mm.

Here we have a perfect size cline from Finland to the West of Ireland and Ushant ; there is also a slight colour cline, birds tending to become slightly darker and richer on the mantle in the west.

Ushant birds might almost deserve a name, being slightly more richly coloured than even West Irish birds, but we have the unfortunate *P. d. hostilis* of Kleinschmidt to deal with which is not quite Swedish and not quite Ushant. If only Linnæus had lived in Finland, Hartert in Connemara and Brehm not at all, how easy would be the task before systematists.

On the Western European forms of *Sitta europæa* Linnæus.

1. *Sitta europæa europæa* L. Upsala, Sweden.

Distribution.—The whole of Scandinavia, Finland and North Russia,

Birds from Estonia to East Prussia have been named *S. e. homeyeri*, but they are true intermediates between *S. europæa* and *S. cæsia* and are better expressed *S. e. europæa cæsia*. Birds from Pinsk and Poland have been named *S. e. stolcmani* and are again true intermediates as *S. e. homeyeri*, and should be similarly expressed. The same applies to *S. e. reichenowi* Kleinschmidt from Silesia and *S. e. sordida* Reichenow. Danish birds are occasionally pure *S. e. europæa* and sometimes *S. e. cæsia*, a hybrid population.

2. *Sitta europæa cæsia* Wolf, 1810. Hanover.
Sitta affinis Blyth, 1846. England
Sitta europæa britannica Hartert, 1900. Tring, Herts.
Sitta hassica Kleinschmidt, 1917. Darmstadt.
Sitta Auto-Sitta hœrningi Kleinschmidt, 1928. Thuringia.

I have examined the series in the Berlin, Leyden and Paris Museums, together with a large series of continental and British birds from private collections. *S. e. hœrningi* was founded on a slightly slenderer bill but eight topotypical examples do not confirm this. *S. e. hassica* was founded on a darker breast and neck. Birds from the Rhine Valley tend sometimes towards *S. e. hispaniensis* Witherby and are better expressed as *S. e. cæsia* $\gtrless$ *S. e. hispaniensis*. They are true intermediates.

I have examined a large series of Dutch, French and British birds. Dutch and British birds cannot be separated on any character from *S. e. cæsia*. A single male from Rotterdam in my collection is particularly bright below, resembling *S. e. hispaniensis*, but the culmen is that of *S. e. cæsia*. Two birds in my collection from Paris are similar. But on the whole birds from North France are typical *S. e. cæsia* whilst others from central France are *S. e. cæsia* $\gtrless$ *S. e. hispaniensis*. A male in my collection from Cherbourg is typical *S. e. cæsia*.

I have tried hard to detect any difference between British and continental birds. I have in my col'ection specimens from Tring, Wales, Hampshire and Cornwall. They differ in no way from topotypical *S. e. cæsia* except one male from Hampshire which matches *S. e. homeyeri* below but is as dark as *S. e. cæsia* above and has the bill of *S. e. cæsia*.

I therefore refer the British Nuthatch to *Sitta europæa cæsia* Wolf.

3. *Sitta europæa hispaniensis* Witherby, 1913. Spain.
Siitta europæa cisalpina Sachtleben, 1919. Rome.

I can see no constant difference between Spanish, Italian, southern France (Pyrenees) and Austrian (Freistadt) birds. Both Spanish and

Italian birds have a shorter and slenderer bill. *S. e. cisalotina* is said to be brighter below than *S. e. cæsia*, and *S. e. hispaniensis* is said to be paler below than *S. e. cæsia*. From both countries some are brighter and some are paler below, but others exactly match topotypical *S. e. cæsia*. The bill is a good character.

4. *Sitta europæa atlas* Lynes, 1919. Moraccan Atlas.

Lynes (Nov. Zool. xxxi. p. 72, 1924) thought this form was identical with *S. e. hispaniensis*. Steinbacher (Vög. Pal. F. p. 164, 1932) places *S. e. atlas* as a synonym of *S. e. hispaniensis*, no doubt misled by Lynes. But neither Lynes nor Steinbacher had seen fresh autumn birds from Morocco. I obtained nine topotypical autumn examples in 1939 (Ibis, 1940, p. 200). They differ from *S. e. hispaninesis* in being darker below but are identical above.

On the British forms of *Certhia familiaris* Linnæus.

1. *Certhia familiaris britannicus* Ridgway, 1882. The type is in the United States National Museum. It was received from the Royal Artillery Institute, Woolwich in 1860. The specimen is an adult male and bears the sole locality " England ". I restrict the type-locality to Mottisfont, Hampshitre.

2. *Certhia familaris meinertzhageni* Clancey, 1942. Caragh Lake, co. Kerry, Ireland. Meinertzhagen coll.

This race was based on two specimens but I now have fifteen, including the type, from extreme west Ireland. I also have in my collection nine specimens from Ross-shire and ten from the south of England.

West Irish birds appear to be a recognizable form, mainly on the greater extent of rusty colour on the flanks and abdomen. The upper parts are slightly richer and darker than English birds, but individuals if compared individually are sometimes indistinguishable. The culmen is often shorter.

North Scottish birds tend to be slightly darker on the upper parts than south of England birds and sometimes slightly redder, but this extremely slight divergence is neither constant nor very noticeable.

On the Western European races of *Ægithalos caudatus* (Linnæus).

Ægithalos caudatus caudatus (Linnæus). North and East Europe, merging into *A. c. europæus* Hermann in Germany and south Poland. Ranges across Siberia east to Korea and probably Japan.

Ægithalos caudatus europæus (Herm.) (1804 : Basle, Switzerland) (syn : *A. c. expugnatus* Bacmeister & Kleinschmidt, 1916. North-east France).

A. c. potyi Jouard. (1929 : La Charente, France).

A pure intermediate between Scandinavian and British races. Some birds from France, Holland and Belgium cannot be distinguished from British birds. White-headed birds of this race often occur in Germany, Austria and western Russia but not in France, Belgium or Holland.

Ranges from southern Russia, Balkans, North Italy, south and central Germany to France, Belgium, Holland and Denmark. Not southern Balkans where *A. c. macedonicus* (Dresser) (1892 : Mount Olympus) occurs.

Ægithalos caudatus aremoricus Whistler (1929 : Britanny) (syn. : *A. c. galliæ* Jouard. (1929, Haute Vienne, France).

A very doubtful race, sometimes intermediate between *A. c. europæus* and *A. c. rosaceus* Mathews and sometimes tending towards *A. c. taiti* Ingram. It is one of those microraces which should never have been described, but once named had better be accepted.

Ægithalos caudatus rosaceus Mathews (1937 : Selborne, Hants).

British Islands. Five Irish birds, all from the west coast, have a well-marked dark-spotted gorget, more so than is sometimes indicated in English specimens of *A. c. rosaceus* Mathews. If this is a constant character the Irish bird would be a valid race.

Ægithalos caudatus chlamyrhodomelanos Clancey (1941 : Sutherland).

Is said to differ from *A. c. rosaceus* in having much narrower white fringes to the innermost secondaries and less white on the inner greater coverts. Pink of flanks slightly darker. I have before me five specimens including the type from the Clancey collection and three other Sutherland birds from my own collection. I have compared these with forty south of England specimens and am unable to confirm any differences in the innermost secondaries or inner greater coverts. Some Sutherland specimens have slightly darker red flanks than is usual in most English specimens but others exactly match. I cannot accept a race based on inconstant and insignificant characters. Such differences should be noticed but not named.

Ægithalos caudatus taiti Ingram (1913 : Portugal) (syn. : *A. c. pyrenaicus* Hartert (1919 : Pyrenees) ; *A. c. bureaui* Jouard. (1929 : East Pyrenees).

A small dark race extending from the Pyrenees to North Portugal and extreme southern France where it merges with *A. c. europæus*.

Ægithalos caudatus irbii (Sharpe & Dresser) (1871 : Gibraltar). A grey-backed race. Southern Spain.

Ægithalos caudatus tyrrhenicus Parrot (1910 : Corsica).

A very doubtful race and almost the same as *A. c. irbii*. The best character is the brown forehead which is white in *A. c. irbii*. Corsica only, not in Sardinia.

Ægithalos caudatus italiæ Jourdain (1910 : Cremona) (syn. : *A c. romanus* Stresemann (1919 : Rome).

A grey-backed race. Southern and central Italy but not Sicily.

Ægithalos caudatus sicula (Whitaker) (1901 : Sicily).

A remarkable race appoaching the Caucasus bird (*A. c. major* (Radde)), the crown being washed with brown. In 1922 I had the whole of Whitaker's series sent to me. They only occur in the highest parts of the centre of Sicily where they are by no means common.

Note.—For full detail on hybrid populations see Stresemann, Orn. Ges. Bayern, 1919, pp. 3–24.

On the validity of *Regulus regulus anglorum* Hartert.

Hartert described the British Goldcrest on its alleged darker, more olive, upper parts, especially the forehead, neck and rump. Witherby (Handbook, 1, p. 316) considered the greyish tint of the hind-neck to be the best distinction of the continental form.

I have had before me the type of *R. r. anglorum*, an adult male from Tring, an ill-prepared skin whose neck and under parts are slightly distorted. It was shot on the last day of October so there can be no certainty that it is a British breeding bird. I also have, from my own collection, five adults obtained at Upsala in fresh autumn plumage and a large series of British and continental birds. In a few cases British specimens are very slightly darker above and below, but the difference between British and continental birds is so slight and often utterly lacking, that it takes greater imagination than I possess to recognize a British race. I am therefore inclined to sink *R. r. anglorum* Hartert into the synonymy of *R. r. regulus* (Linnæus) noting that there is a slight tendency to darkness sometimes in British birds.

On the geographical races of *Turdus philomelos* Brehm.

I discard *Turdus ericetorum* Turton as the name of the song thrush for reasons given elsewhere.

I have had before me the series in the Stockholm, Berlin, Leyden, Paris and British Museums together with my own extensive series listed

below under each race. Throughout its range the song thrush is a bird of great inconstancy and instability but, on the whole its variation is a perfect example of colour cline from Russia to the Outer Hebrides and West Ireland—from greyish brown to chocolate-brown and the under parts, spotting-cline is equally constant from the few brownish spots in its eastern habitat to the dense black spotting in the extreme west.

Turdus philomelos 'philomelos Brehm, 1831. (On migration in Central Germany.) The type is not in the Brehm collection.

Turdus musicus var. *planiceps* H. & E. 1833 (Egypt). Type examined in the Berlin Museum.*

Turdus musicus brehmi Zedlitz. 1919. A true intermediate between *T. p. philomelos* and *T. p. clarkei*. See also Hartert, Vög. Pal. F. iii. p. 2157.

Turdus philomelos distinctus Sarudny, 1918. (Gilan.)

Turdus philomelos nataliæ Buturlin, 1929. (Krasnojarsk.)

I have in my collection breeding birds from Sweden, Finland, Estonia and Berlin and winter birds from the Pyrenees, Morocco, Egypt, Palestine, Iraq and a single specimen from a Ross-shire Lighthouse.

This is the palest race being greyish brown on the mantle, with few spots on the breast of a brownish, not blackish, colour and with the least yellow on the upper breast. Wings run large, up to 122 mm.

The border line between this race and *T. p. clarkei* runs down the centre of Germany. Birds from Hanover are certainly *T. p. clarkei* (four birds from Göttingen in my collection agree exactly with the type of *T. p. clarkei*).

Distribution.—Scandinavia (birds from Upsala are slightly darker than Finnish and Central German birds) east to the Urals and has bred on Lake Baikal. South to the Caucasus. Wintering in Persia, Iraq and west to Egypt and Morocco and only occasional in the British Islands.

An exhaustive monograph on the ecology and distribution of *Turdus philomelos* (without systematics) is by Siivonen (Ann. Zool. Soc. vii. 1939. Helsinki).

Turdus ericetorum Turton, 1807 (Darenth, Kent). Indeterminate.

Turdus philomelos clarkei Hartert, 1909 (Tring, Herts.). The type, now in the British Museum, was shot by Dr. Hartert from a window in the Tring Museum in May 1902. It is an adult male.

Turdus philomelos catherinæ Clancey, 1938 (Cathcart, Renfrewshire). Type, a January female.

* The type is a migrant shot at Damietta without date. Berlin Mus. No. 34207. It is a brownish bird, but must have been greyer 120 years ago. Thrushes " fox " quickly.

I have in my collection three birds from Tring, four birds from Göttingen (Hanover) and a large series from all over Scotland, East Anglia, the South of England from Kent to Cornwall, and from the west coast of Ireland. They are a most inconstant lot even by locality, rarely approaching the grey of *T. p. philomelos*, but many, especially from west Ireland, west England and west Scotland, approaching *T. p. hebridensis*. These are best called *T. p. clarkei hebridensis*.

In the main the mantle is richer, redder than in the typical form, spotting darker and denser and with slightly more yellow on the upper breast, all characters being variable in degree. Witherby thought that Skye specimens were *T. p. hebridensis*. I have seen five Skye specimens and regard them as *T. p. clarkei* in its extreme form, none being so dark as typical Hebridean birds.

Distribution.—There is a large belt in west central Europe from between Berlin and Hanover, south to Bohemia and the Balkans where the population is *T. p. philomelos* $\gtrless$ *T. p. clarkei*. Dutch, Belgian and French birds are true *T. p. clarkei* in its extreme pale form. The whole of the British Islands except the Outer Hebrides, though a few individuals are typical of *T. p. hebridensis*.

Turdus philomelos hebridensis Clarke, 1913. (Barra, Outer Hebrides.) Types, a pair of April birds. In the Royal Scottish Museum where I have examined them.

I have in my collection the following which are typical of this race. Eleven from South Uist, two from west Scottish Lighthouses, three from the Aran Islands (Ireland), one from Achill Island, and two from co. Kerry. One from Surrey and one from Algiers.

Almost chocolate-brown on the mantle. Breast spotting dense and black, and with more yellow on the upper breast.

On the forms of *Prunella modularis* (Linnæus) from western Europe.

I have had before me the type of *Prunella modularis occidentalis* (Hartert) (1910 : Tring) and six other specimens from Tring in my own collection ; also eleven specimens from Norway and Sweden and seven from Holland, kindly lent by the Leiden Museum. I have also examined the series of western Eueopean birds in the British Museum.

Prunella modularis occidentalis (Hartert).

The British form was differentiated on being slightly darker below and not so bright, so reddish brown, above. The second primary is also shorter in proportion to the seventh. These differences are confirmed in the series I have had before me. The type is a worn spring bird from Tring, the second primary equalling the seventh,

Prunella modularis plumbea (Pallas), 1764. Holland.

Dutch birds are strict intermediates between *P. m. modularis* and *P. m. occidentalis* Hartert, and are better labelled *P. m. modularis* $\lesssim$ *P. m. occidentalis.*

Prunella modularis interposita Clancey (1943 : Dornoch).

These are pure intermediates between *P. m. occidentalis* and *P. m. hebridium* and are better labelled *P. m. occidentalis* $\gtrsim$ *P. m. hebridium.* Some west Scottish specimens cannot be distinguished from the Hebridean race, though never attaining the richness and darkness of extreme examples of the latter. Other mid and south Scottish specimens cannot be distinguished from Tring birds.

Prunella modularis hebridium Meinertzhagen (1934 : South Uist).

This form is conspicuously darker and richer above and below than *P. m. occidentalis.*

Prunella modularis hibernicus Meinertzhagen (1934 : Curragh).

I now have twenty-four specimens, mainly from the west of Ireland. They are redder and richer on the mantle, more foxy than in *P. m. occidentalis*, and paler and never so heavily marked below as in *P. m. hebridium.* Birds from Wales and the west of England often tend towards the Irish race, though specimens from Cornwall and the Isles of Scilly exactly match Tring specimens.

Prunella modularis lusitanica Stresemann (1928 : Portugal), of which *P. m. obscura* Tratz is a synonym ; and

Prunella modularis mabbotti Harper (1919 : Pyrenees).

I have not been able to examine a sufficient series of these races to judge their validity, but those I have seen do not appear to differ in any marked degree from *P. m. modularis.*

A small series of Italian birds are not so bright, slightly greyer, than Swedish specimens, but some exactly agree.

Prunella modularis race ?

Seven birds from Ushant in my collection and one from Paris match Swedish specimens above, but resemble British specimens below, and often show considerably more rusty colour on the breast than ever occurs on British or continental specimens. They possibly deserve a name, but I should like to see a larger series from Ushant, the end of a cline, before labelling them.

On the status of *Picus viridis pluvius* Hartert.

I have examined the Green Woodpeckers in the Stockholm, Berlin, Leyden and British Museums, together with a large series from the Continent and the British Islands in private collections, over 200 specimens in all.

There is no colour difference between Swedish, German, Dutch and British specimens. But there is a constant size cline of culmen and wing from large in the north to small in the south and west.

		mm.	mm.		mm.
Swedish birds :	♂♂ wing	168–175,	♀♀ 163–171 ;	culmen	♂♀ 49–54
North German birds :	♂♂ ,,	165–174,	♀♀ 161–170 ;	,,	♂♀ 47–54
Central German birds :	♂♂ ,,	157–170,	♀♀ 156–170 ;	,,	♂♀ 46–54
Dutch birds :	♂♂ ,,	159–169,	♀♀ 156–167 ;	,,	♂♀ 43–50
British birds :	♂♂ ,,	157–165,	♀♀ 158–168 ;	,,	♂♀ 42–48

The synonymy of the British form would appear to be :—

Gecinus virescens Brehm. 1831 : Winter visitor to Germany. No type exists and the name should be discarded as indeterminate.

Gecinus pinetorum Brehm, 1831. Germany, nec *Picus pinetorum* Brehm.

Picus viridis pluvius Hartert, 1911. Ninfield, Sussex. Type in the British Museum.

Picus viridis minor Fuchs, 1915. Germany, nec *Picus minor* Linnæus.

Hartert's name is therefore the correct one for the population of the British Islands, Holland, Belgium and central and south-central Germany. North German birds are intermediate between Scandinavian and central German birds, many of them being inseparable from Swedish specimens.

On the type-locality of *Pyrrhula pyrrhula nesa* Mathews & Iredale.

Mathews and Iredale (Austr. Av. Record, iii. p. 122, 1917) after referring to a description quoted from the B. O. U. List, p. 358—" The British form is less clearly separable, but the female of the British form has a darker brown back and a darker and browner under-surface "—name the British Bullfinch *Pyrrhula pyrrhula nesa*. This name narrowly escapes sinking, and is only saved by reference to an inadequate description. No type is made and no type-locality is designated. I believe that neither Mathews nor Iredale had specimens before them, though Iredale at the time took a cursory glance at my series.

Clancey (Bull. B. O. C. 1947, p. 76) restricts the type-locality to Tring ; a pity, for birds from western England and Ireland are much more typical, and Hartert had specimens from all these localities,

Lectotypes.—Male and female, Tring, Hertfordshire. December 10, 1909. In Meinertzhagen collection.

Mr. Mathews has kindly concurred.

On the type-locality of *Lagopus mutus millaisi* Hartert.

Hartert ('British Birds', xvii. 1923, p. 106) named the Scottish Ptarmigan *Lagopus mutus millaisi*, nom. nov. for *Lagopus cinereus* Macgillivray, which is a substitute name and refers to the description which he (Hartert) gave in Vög. d. Pal. Fauna, p. 1869. Though *L. m. millaisi* is called a nomen novum it should have been called subsp. nov., and accompanied by a designation of a type and type-locality. When Hartert was working on the Scottish Ptarmigan he had before him a small series in the Rothschild collection, a large series from John Millais's collection and a large series from the Meinertzhagen collection. I therefore designate for *Lagopus mutus millaisi*.

Lectotype.—Adult male, Ben Wyvis, Ross-shire, Scotland. August 3, 1920. In Meinertzhagen collection.

On the type-locality of *Tringa totanus britannicus* Mathews.

Clancey, 'Ibis', 1947, p. 511, restricts the type-locality of *Tringa totanus britannica* Mathews to Yarmouth. That is a pity, as some Dutch and East Anglian specimens approach the Scandinavian form, whereas south of England specimens are typical of Ticehurst's diagnosis. In working out the British race, Ticehurst had not only his own series, but also my own extensive series of south of England birds. I therefore designate as

Lectotype.—Adult male, Mottisfont, Hampshire. April 12, 1929. In the Meinertzhagen collection.

In this, Mr. Mathews has kindly concurred.

Records of Bird Songs and Calls.

Colonel R. Meinertzhagen played some Gramophone Records of Swedish Birds Songs and Calls, which had been lent to him by the Swedish Broadcasting Corporation.

Some Breeding Data from Nyasaland.

Mr. C. W. Benson sent the following three notes :—

(1) *Ciconia nigra* (Linnæus).

The Rev. J. H. Rens, a most reliable observer, reports seeing a pair carrying sticks to an inaccessible cave on Mphunzi hill, Dedza district,

July, 1943. They were seen there continuously until October. Breeding in Nyasaland already strongly suspected; Ibis, 1928, p. 706. Chipata and Kambironjo records also suggestive; Ibis, 1940, p. 279; 1942, p. 201.

(2) *Dendrocygna viduata* (Linnæus).

Female taken at nest with ten slightly incubated eggs, Karonga, March 5. Eggs buffy cream, smooth texture, slight gloss, average size 48·5×36·2 mm. Nest on sudd, a shallow hollow of dried grass, no lining; extremely well concealed by a " mat " of tangled dried grass, 1 ft. above. Five ducklings, less than one week old, seen Karonga March 24, were yellowish cream, with a broad greenish-black band on upperside, from bill to tail, with lateral markings of same colour.

(3) *Circætus cinerascens* Müller.

Female (coll. no. N4052, for presentation Brit. Mus.) shot at nest with one egg soon to hatch, Karonga, March 15. Wing 404 mm., tail with two light bands, belly only obscurely barred; thus not *C. fasciolatus* Gurney. Egg dull white, no gloss, smooth texture, irregularly smeared dull reddish brown on pale grey; interior very pale green; size 70×54 mm. Nest of sticks, 2 ft. diam., 6 in. thick, lined with small leaves, near top of a 30 ft. high *Acacia* tree, in banana plantation on edge of a native village. I can find no earlier authentic breeding record.

Notes on Central African Birds.

Mr. C. M. N. White sent the following five notes :—

1. *Calamæcetor leptorhyncha winterbottomi*, new race.

Differs from *C. l. leptorhyncha* (Reichenow) in being larger, having the wing 67–71 mm. as against 59–68 in the nominate race, and the tail 59–66 as against 51–60 mm.; differs from both *C. l. leptorhyncha* (Reichenow) and from *C. l. macrorhynchus* (Jackson) in the colour, having the upperside much colder and more olive less brown, the head top dull olive-grey in contrast with the mantle; underside much whiter, the flanks and under tail-coverts with a slight olive-greyish or olive-fawn wash, but without the strong russet wash of *C. l. macrorhynchus*. The immature plumage of this new race is markedly different from immatures of the two races cited in that it is much darker and more olive-brown, lacking the bright rusty shade of immatures of *C. l. macrorhynchus* from the Luapula river.

Distribution.—The Macondo district of Eastern Angola, south along the Manyinga and Kabompo rivers in Northern Rhodesia.

Type.—In my collection. Male adult collected on the Manyinga river, Macondo district, Angola, on July 27, 1945, by K. Muzeya.

Remarks.—This is undoubtedly one of the small forms of these Reed Warblers grouped under *C. leptorhyncha* (Reichenow). The bill in the series obtained is 18–20 mm. in length, *i. e.*, not different from the typical race. Nine adults and two immatures of this new race examined and two of *C. l. leptorhyncha* from the Middle Zambesi river and six of *C. l. macrorhynchus* from the Luapula river. Also two of *C. gracilirostris* near to *cunenensis* (Hartert) from the Upper Zambesi at Balovale, Northern Rhodesia. Measurements for comparative purposes have been taken from the literature as well as from these specimens.

2. The distribution of *Bradypterus babæcala msiri* Neave.

I have recently been able to examine a series of this bird collected by K. Muzeya, my collector at the Kabompo pontoon and Manyinga river in the Balovale district of Northern Rhodesia and on the Manyinga river in the Macondo district of Angola. I have also examined two specimens collected by E. L. Button at the Itawa swamp, Ndola. All these birds agree well with birds from the Luapula river opposite Kasenga. Wing of twelve specimens 57–63 mm.

3. The distribution of *Apalis pearsoni* (Neave).

Mr. E. L. Button recently collected two specimens of this species at the Misengo stream in the Ndola district. This locality is a small tributary of the Kafue close to the Belgian Congo border at Kipushi. I have compared these specimens with *Cisticola fulvicapilla muelleri* Alexander, *C. f. dispar* Sousa, and *C. angusticauda* Reichenow. They are easily distinguished by the long black tail and the much lighter and greyer back, and agree well with Neave's figure in Ibis, 1910, pl. 2. They are the first record from Northern Rhodesia and represent an extension of the known range.

4. On the status of *Eremomela griseoflava lundæ* Grant & Praed.

This race was described in Bull. B. O. C. lxi. 1941, p. 62, from Missao de Luz, north of Villa Luz, Angola, as similar to *E. g. polioxantha* Sharpe, but differing in having the mantle and rump olive-green. In this it resembles *E. g. salvadorii* Reichenow, described from Leopoldville, and it is not clear how the latter differs from *E g. lundæ*. I have compared

birds from Luluabourg with specimens from the Upper Zambesi at Balovale, and find them practically identical, the only difference being that the olive back is perhaps a little brighter and the abdomen slightly richer yellow in the birds from Luluabourg. This difference is exceedingly slight, and as *E. g. polioxantha* occurs only 80 miles away to the east at the Chikonkwelo stream probably no more than the effect of intergradation. I would unite *E. g. lundæ* with *E. g. salvadorii*. Birds from Mwinilunga are better referred to *E. g. polioxantha*. Since then I have compared my series with the type of *E. g. lundæ*, and find them identical. Captain C. H. B. Grant who looked at them with me concurs in this.

5. *Colius striatus lungæ*, new race.

Description.—Differs from *Colius striatus congicus* Reichenow of the Inner Congo basin in having the iris with the upper half yellow and lower half brown, instead of a greenish iris ; underside darker, especially the breast and sides which have a vinous tinge ; wing longer, 95–105 mm. against 92–97 mm.

Distribution.—The Mwinilunga district of Northern Rhodesia to the Katanga.

Type.—In my collection. Female adult, Mwinilunga, Northern Rhodesia, on May 22, 1939, by C. M. N. White.

Notes on Eastern African Birds.

Captain C. H. B. Grant and Mr. C. W. Mackworth-Praed sent the following five notes :—

(1) On *Pycnonotus annectans* Roberts.

In the Bull. B. O. C. 66, 1946, p. 46, we stated that this Bulbul had been taken by Winterbottom at Livingstone. We have re-examined the specimens and find that none of them are *P. annectans*, but all are *Pycnonotus xanthopygos layardi* Gurney.

This agrees with White's distribution as given in the Ibis, 1945, p. 574.

(2) On the type-locality of *Laniarius ferrugineus sublacteus* Cassin, Proc. Acad. Sci. Philad. 1851, p. 246.

Cassin gives only " East Africa ", and Dr. Chapin advises us in a letter, dated September 18, 1947, that the particulars on the label of the type give no indication of a more exact locality. We therefore propose to fix the type-locality of *Laniarius ferrugineus sublacteus* Cassin, as Lamu, eastern Kenya Colony.

(3) On the status of *Coliuspasser macrocercus soror* (Reichenow), J. f. O. 1887, p. 70 : Kawanga, Kavirondo, western Kenya Colony.

Reichenow's principal characters are smaller size, wing 80 mm., and light yellow wing shoulder. The British Museum series from Abyssinia shows a wing-measurement of males 81–95 and females 73–77 mm., the measurements of 81 mm. being found as far north as 40 miles south of Lake Tana.

We are also unable to see that the colour of the wing shoulder holds good. We therefore place *Coliuspasser macrocercus soror* (Reichenow) as a synonym of *Coliuspasser macrocercus* Lichtenstein.

(4) On the type-locality of *Poliospiza burtoni tanganyicæ* (Granvik), J. f. O. (Sond.), p. 191, 1923 :—

The author gives only " from Tanganyika ", and in a letter dated Octoner 5, 1947, he states that there was no other locality on the labels of the six specimens he examined in the Berlin Museum. As the distribution of this race is from north-eastern Belgian Congo to western Uganda and the Lake Kivu area, we propose to fix the type-locality of *Poliospiza burtoni tanganyicæ* (Granvik) as north end of Lake Tanganyika, eastern Belgian Congo.

This race, so far as we know, is not found in either the Tanganyika Province of the eastern Belgian Congo nor in Tanganyika Territory.

(5) On the status of *Serinus flavivertex elgonensis* Granvik, Rev. Zool. Afr. et Bot. 1934, p. 182 : Mt. Elgon, Kenya Colony.

As we find that all the characters given for this race are to be seen in specimens from Abyssinia to Tanganyika Territory, we place *Serinus flavivertex elgonensis* Granvik, as a synonym of *Serinus flavivertex flavivertex* Blanford.

Notice.

The next Meeting of the Club will be held at the Rembrandt Hotel, South Kensington, S.W. 7, on Wednesday, November 19, 1947. Dinner at 6.30 P.M.

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

PURCHASED

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No. 2.

The four-hundred-and-seventy-first Meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, S.W. 7, on Wednesday, 19 November, 1947, with dinner at 6.30 P.M.

Chairman : Dr. J. M. HARRISON.

Members present :—Miss C. M. ACLAND ; F. J. F. BARRINGTON ; Mrs. G. M. CHADWYCK-HEALEY ; W. E. GLEGG ; Miss C. E. GODMAN ; Miss E. M. GODMAN (*Vice-Chairman*) ; Capt. C. H. B. GRANT (*Editor and Acting Hon. Secretary*) ; Dr. J. G. HARRISON ; P. A. D. HOLLOM ; Miss E. P. LEACH (*Hon. Treasurer*) ; Miss C. LONGFIELD ; Dr. G. CARMICHAEL LOW ; Dr. P. R. LOWE ; G. M. MATHEWS ; E. M. NICHOLSON; E. R. PARRINDER ; Lt.-Col. W. A. PAYN ; C. W. MACKWORTH-PRAED ; Major G. H. R. PYE-SMITH ; Lieut. R. A. H. REYNOLDS ; Miss G. M. RHODES ; Lt.-Cmdr. C. P. STAPLES ; Lt.-Col. W. P. C. TENISON (*Vice-Chairman*) ; B. W. TUCKER ; C. N. WALTER ; Col. O. WYNNE.

Guest of the Club :—Lieut. W. RYDICWZ.

Guests :—Count BOBINSKEY ; Mrs. P. R. LOWE ; Mrs. C. W. MACKWORTH-PRAED ; Mr. D. C. H. M^{c}LEAN ; Miss MEADE-WALDO ; Dr. W. A. RICHARDS ; Miss R. E. A. SHUTER.

Members, 27 ; Guests of the Club, 1 ; Guests, 7 ; Total, 35.

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Colour change without moult as seen in the spring plumage of certain wading birds.

Dr. J. G. Harrison gave the following talk and showed specimens :—

Introductory.

I am afraid that we are about to discuss tonight a question that has been much debated and argued about in the past, and one which many of you here tonight must have imagined was safely laid to rest many years ago. It is the question of colour change in feathers without moult. Those of you who were at the last meeting of the Club in October will remember that the question came up then after Col. Meinertzhagen had read his interesting paper. This caused me considerable surprise, as I had been quietly working on this problem for about a year, and had intended reading a paper on the subject at some future date. In the heat of the argument, I foolishly said that I would do it next time, and now thanks to my rashness, here I am.

I have been quite convinced in my own mind that the phenomenon of colour change in a feather can occur without a moult, and that this can be seen in certain species of wading bird. I do not propose to deal with any other group of birds, as I have not studied them and know nothing about them, but workers in the past have named many different species in which they claim to have seen this happening. I may as well state now, that my findings are that certain species of wader change into spring plumage by a combination of change of colour in the fully formed and apparently " dead " feather, and by moulting.

Firstly, I think it might interest you if I give a brief summary of the heated battle that raged from about 1830 until 1913, when a very firm stand by Mr. Witherby finally put an end to it, and it was decided that feathers could not change colour except by moult.

Historical.

In 1792, Captain Cartwright said this of the change of plumage in Ptarmigan as observed by him in Labrador—" in the fall, they get a large addition of white feathers, and the coloured feathers at the same time turn white." This was the earliest record that I can find, and it was not until 1833 that the next important paper appeared. This was an article by Hunt, who was a keeper at the London Zoo. He kept a daily watch on a Black-tailed Godwit and a Ruff in the aviary at the Zoo. In the Godwit, first signs of a change into spring plumage was noted as early as February 24, the change being absolutely a change of colour, not produced by moulting. With the Ruff he stated that the head and

neck acquire a new spring plumage by moulting, while the feathers of the body were not thrown off. These were the notes which were regarded by the American, Allen, in 1896 as valueless, because the birds were apparently not handled. He ignored the absence of any moulted feathers in the cage—and anyone who has kept birds will know that there is no doubt when a bird is in moult.

In 1890, Gatke published his book on the birds of Heligoland, and a whole section of this most interesting book is devoted to our subject. In parts of the book we know that his enthusiasm rather carried him away, and I think that it is in this light that people have tended to consider his chapter on colour change. He states that very striking changes in colour occur without moult, and without such alteration being brought about by any changes in texture (*i. e.* Linnet). Gatke was a great collector of birds, and he makes a point of stating that he based his observations on fresh examples, in which by examination of the inner cutaneous surface, it was possible to determine whether moulting actually took place or not. He quotes such examples as the Gulls, Auks, Pied and White Wagtails, and the Wading birds. I can fully confirm his findings on the last group, and I would like to point out that he was not carried away by his theory, and he realised that some moult occurred as well, such as the breasts of the Dunlin, Grey and Golden Plovers.

It was Gatke that really started the great controversy going, and in 1896–7 three ornithologists from America, Chapman, Wilmer Stone and Allen went into print and denounced Gatke's theory as being quite impossible. Both Chapman and Stone examined a long series of Sanderling and Dunlin in the American Museum of Natural History and both independently found that spring plumage was acquired by a moult, because they found feathers in quill in many of the spring specimens. Mr. Allen's line of attack was the well-known one that a feather once completed is dead and retains no further power of transmitting colour through the quill from the epidermis.

Back in England in 1896, Millais lost no time in taking up the pen in support of Gatke, and he wrote in 'The Ibis' of that year—"Mr Allen seriously impugns the accuracy of statements made by many naturalists of repute. In so doing, he is rather dogmatic and brings no proof to back up his statement that the feather after being once complete, becomes exhausted and falls like a leaf from a tree. He then says that a wading bird assumes its summer dress by means of a recoloration of the feathers, in which both altered forms and colours take place. A few feathers are however cast on the head and neck and breast, which are replaced by new summer ones."

Mr. Millais goes on to give his findings on the Sanderling, and he published in ' The Ibis ' a coloured plate of a painting showing mantle feathers of this species throughout the year which appear to demonstrate quite plainly that the feathers change colour without moulting. It was a pity that he did not publish a photograph instead, as the adult " dead " quills would have been obvious, and so rule out any question of a moult.

In 1910, Dr. Bahr, now Sir Philip Manson-Bahr, wrote in ' British Birds ' on the supposed colour change and the spring moult of the Black-headed Gull. He was able to prove conclusively that the Black-headed Gull assumes its hood by a moult ; to do this he was able to watch a tame one.

The general trend of the argument was now very definitely against any change of colour without moult. Mr. Millais gave some further examples in his ' British Diving Ducks,' and this called forth a long article on the subject from Mr. Witherby in his review of the book in ' British Birds.' He summarised the work up to that time, 1913, and came to the conclusion that there was no change of colour except by moult. He did this in so firm a manner that there was very little discussion after this. Mr. Witherby wrote as follows :—

" Mr. Millais, as is well known, has for some years been one of the chief exponents of the theory of colour change in the full-grown feather. That the colour of the feather can change by the loss of certain portions and by disintegration in the cortex everyone admits, but Mr. Millais argues that changes in colour occur which can only be brought about by actual repigmentation or rearrangement of the pigment. In this volume he does not bring forward many instances of this, but we notice that he claims a colour change in the flanks of the immature drake Scaup, apparently in the undertail coverts of the adult drake Tufted Duck and in the cheeks and lores of the adult drake Long-tailed Duck. In his opening chapter, however, he invites criticism on the subject and cites as a clear case the scapulars of the adult drake Wigeon.

We have examined eleven specimens of adult drake Wigeon moulting from eclipse to winter plumage, and in these all the feathers which were growing or had quill sheaths attached to them were normal winter feathers, and we were unable to find a single new feather as described by Mr. Millais. In most eclipse specimens, however, some of the scapulars are partially barred, and these in our opinion are so when newly grown, and remain until shed. How does Mr. Millais prove that the feathers which he describes as growing in the autumn with partial eclipse colouring are not moulted again ? It seems to us that such feathers might occur in individuals in which part of the pigment developed was of the same nature as that producing the previous plumage.

Some years ago in an article entitled " On the change of birds to spring plumage without a moult " (Ibis, 1896), Mr. Millais instanced the Sanderling as a bird which changed " by a complete recolouration of the feathers in new form throughout the whole plumage, only a few being moulted and replaced by new summer ones." In this bird, Mr. Millais says there is no moult in April, May and June, and he gives illustrations of feathers taken from different individuals in those months to prove that they change colour. We happen to have examined a good series of spring Sanderling, and can assure Mr. Millais that he is entirely wrong in assuming that they have no moult ; on the contrary, the spring moult, for a spring moult, is a fairly complete one. In this case certainly, and possibly in others, Mr. Millais has misinterpreted the evidence and appears to have overlooked the following facts which apply not only to the Sanderling but to many other birds which undergo a spring moult :—

1. The moult is gradual.

2. Different individuals moult at different times.

3. Individuals vary in the extent to which old feathers are cast and new ones acquired, as well as in the intensity of coloration, and markings.

4. The feathers themselves in the same region of the body vary greatly and it is therefore impossible to prove colour change by comparing individual feathers.

Mr. Millais states in the work under review that Mr. Pycraft has microscopically examined feathers and is unable to find ' any channels by which colour or life can be passed up the quill and rami,' but, adds Mr. Millais, he has admitted that his microscope was not a very powerful one.

Mr. Millais is evidently unaware of the very careful and prolonged investigation on ' The Development of Colour in the Definite Feather ' undertaken by Mr. R. M. Strong at the Museum of Comparative Zoology at Harvard University, U.S.A. under the direction of Professor E. L. Mark.

In our judgment this investigation disposes of the possibility of repigmentation or redistribution of pigment in a feather. Mr. Strong's paper is long and highly technical, but we may with advantage quote the following conclusions from the section devoted to change of colour without moult, more especially as many ornithologists in Britain appear to be ignorant of Mr. Strong's investigations.

The arguments against change of colour without moult through repigmentation or regeneration of pigment may be summed up as follows—

1. Most feather pigments are too resistant to chemical reagent to warrant belief in their solution and redistribution.

2. Pigmentation of the feather has been observed to take place only in the younger stages of the feather germ.

3. At the end of cornification melanin granules have a definite arrangement which is permanent.

4. When cornification has ensued, the various elements of the feather are hard, more or less solid structures, and their pigment contents effectively isolated from one another.

5. There is no satisfactory evidence of the occurrence of repigmentation, and all the histological conditions render such an event highly improbable."

This review by Mr. Witherby brought the controversy to a close, except for one last upholder of the theory, Abel Chapman, who had something to say on the subject in his ' Borders and Beyond,' published in 1924. He believed that the phenomenon could be seen in various species of duck, and had this to say on Curlew :—

" In April, when nuptial influences prevail, their whole plumage takes on a rich warm rufous cast, as it were a ' breeding dress '. The effect arises, however, not from a moult, but by a suffusion of warmer colour into the living feather—thus the brighter hues then attained go to adorn feathers already worn and ragged.

" So ruddy do the adult Curlews on the coast become in May, that on occasion both my puntsman and myself have half mistaken them for red Godwits. This rufous colour, which even suffuses the tail feathers, is, however very evanescent, vanishing almost completely in a preserved skin."

Demonstration.

That is, very briefly, the way the argument ran, but since 1924 little more has been heard of it.

I first became interested in the subject about two years ago, when I was looking through the collection of wading birds in my father's collection and found there some very interesting Knots, which were collected in February in Lincolnshire. I have them here for you to see tonight. I was convinced by these specimens that colour change could

occur without a moult, and it was only after I had decided to go into the matter more carefully that I learnt what a heated controversy the subject had caused in the past.

Before going any further I must state that my findings lead me to believe that both sides of the argument are correct and that a wader both moults and changes colour to assume its full breeding plumage. It seems to me that in the past too much work was done on specimens in April, May and June, when a great deal of actual moulting is taking place, whereas it is in January, February and March that the colour changes are best seen, when they are not obscured by other changes. Those who have argued against colour change appear to me to have ignored the early changes, and have examined birds in the later months when moult is occurring, and to have been misled by this.

Another factor that has misled people is that the supporters of the theory have not attempted to produce actual feathers to prove their points. Millais and Chapman relied on illustrating theirs, and Gatke did nothing except write about them.

It is not my aim tonight to discuss the mechanism of this colour change without moult, but it is to try to convince you that it does actually occur. I shall, however, just touch briefly on the mechanism before I end.

For the demonstration tonight, I shall confine myself to three species of wader, the Knot, Redshank and Black-tailed Godwit. In these three species I have been able to find enough examples to illustrate all the points that I wish to show to you tonight.

A newly moulted feather can be recognized, as doubtless you all know, by the fact that there is still blood in the base of the quill, which gives it a blue-black appearance. Pigment is carried to the newly growing feather by means of the blood. In the fully formed and apparently dead feather, there is no blood in the base of the feather and the quill appears empty and white or transparent. In some of the feathers that I have here tonight, there is a little brown staining on the base of the quill, but this is on the outside, and is where the feather was attached to the dried skin.

Another important sign of age in a feather is the presence or absence of wear. The more worn a feather, the older it is.

The Knot.

The first changes into spring occur in some examples as early as January. The change commences in the grey mantle feathers of the winter plumage. The black pigment appears first along the central

shaft, and gradually spreads out laterally to form a diamond-shaped area of black. Further black markings appear laterally and spread inwards. I have four examples of such feathers as well as some of the specimens from which they came, and in these feathers I would like you to note that they all have empty adult quill bases, *i. e.* they are not new feathers.

Thus, about March, the Knot has feathers which have as a ground-colour the grey of winter, with the basic black of summer superimposed. Such feathers officially do not exist !

The next step in the Knot must be the deposition of the chesnut pigment, such as you see in the May examples. Unfortunately, in the series of Knots at Sevenoaks we have none at the right time to show this occurring, but reference to the Black-tailed Godwit feathers on demonstration will show this, and I can see no reason why the Knot should differ.

In any case, supposing for the sake of argument that the grey-and-black mantle feathers of the March Knot were assumed by a moult. How are they to have their chestnut-and-black markings in a further month ? If they do not change colour, then they must moult, and this would mean that the Knot moults twice in two months, a most unlikely state of affairs and one which goes against the evidence of our own eyes.

With regard to their breasts—the examples here tonight look superficially as if they are gradually becoming suffused with pink, but a careful examination has convinced me that this is not so, and that the breast looks pale in March because a few newly moulted chestnut feathers are tucked away among a lot of white ones.

The Black-tailed Godwit.

My series of feathers from this bird is better than the Knot. Change occurs in the same way as in the Knot, with black forming along the central shaft first, and spreading laterally, and then further black starts at the periphery and works inwards. The same is seen in the developing chestnut which occurs first at the periphery. These feathers all have empty quill bases, and in the almost complete ones look like an anaemic example of the proper spring feather. Some of them have worn tips already, which proves that they cannot be new feathers. Several of these feathers have winter coloured tips, where they have not changed colour yet.

The Black-tailed Godwit appears to show a peculiar state of affairs, which I have not been able to see in other waders. There appears to be a relation between the amount of moult that occurs and the age of

the bird. The older the bird, the more it moults into spring plumage. The rather pale spring plumaged birds are the young ones, and these have a different type of spring plumage to the far brighter older birds —a fact which you will best appreciate if you look at the two examples I have here tonight.

The Redshank.

My series of Redshank feathers are pretty well complete and show all the stages of transition into spring plumage. This species tends to differ from the other two in that the pigment appears first on the periphery of the feather and develops inwards to form the bars. Some time after the dark bars have developed, light pigment then forms in between the dark bars.

This is all that I wish to say about these three species tonight. I have not explained in detail the complete moult of any of these species. That is not my intention. I feel that I should make a few remarks before I end about the mechanism of colour change without moult. I do not know how it happens ; no one knows how it happens, but I hope that some of you at any rate think that it does happen, now that you have seen my exhibits. I have not stated anything new tonight, but what I have done is to try to bring to you the evidence, which the older ornithologists were unable or did not do.

There is nothing unscientific in accepting the phenomenon even though the mechanism is unknown. No one doubted the action of penicillin, although it was not until a few months ago that its exact method of dealing with bacteria was discovered by the biochemists.

I think that everyone will accept the fact that no pigment can get into the feather from the skin or blood stream once the quill base has dried up. Therefore this colour change must occur in the feather itself. This was the fact that finally brought the theory into disrepute before. However, I do not think that this is so impossible as some would appear to think it. In the last issue of ' British Birds,' November 1947, there is an article by the curators of the York Museum on " Cabinet Changes of Bird Skins "—or " foxing " as it has been called. These authors found that various colour changes occur in certain species of bird skin when they are kept in cabinets over a number of years. For instance, the blue-green reflections of the Hooded Crow and the Chough turn to purple, as does the Carrion Crow. Various other changes have been observed in other widely differing species. This in itself is sufficient evidence to refute the statement quoted by Mr. Witherby that the feather pigments are too resistant to chemical reagents to warrant belief in their solution and redistribution. Birds in cabinets cannot moult.

This fact seems to me to suggest very strongly that a feather is not really an inert structure, such has been previously believed, but is capable of undergoing various changes. What these changes are has yet to be discovered. I expect that they will be found to be some complicated biochemical change in the pigment, which alters to a different colour. It will be an interesting research for some keen biochemist of the future. For the present, however, I shall be satisfied if I can convince you that the change does occur. If this is so, then it means that our entire knowledge of moulting will have to be revised, in order to see what species change colour, and when.

Mr. B. W. Tucker then spoke. The gist of his observations was as follows :—

I have listened with interest to what Mr. Harrison has told us. He has presented his case in a most objective and judicial way, even to the extent of quoting verbatim one of the most cogent summaries of the evidence against it that has been written. Mr. Witherby's comments in his review of Millais's ' Natural History of the Diving Ducks ' really leave remarkably little that I can add, but there are some points which will bear stressing.

In the first place, as Mr. Harrison frankly admits, there is nothing really new in what he has told us. Some details with regard to particular feather types of the waders have no doubt not been recorded before, but the evidence is of identically the same kind as can be found put out at length and carefully illustrated in Millais's book on the Surface-feeding Ducks—evidence which has nevertheless been rejected by every qualified worker who has studied the plumage changes of the ducks seriously.

Mr. Harrison has said that we should not refuse to believe in an occurrence because we do not understand how it is brought about. Obviously no scientist would dispute this, provided the evidence for the occurrence is good ; there are innumerable natural processes which we cannot, or cannot fully, explain. But when the structure and development of an organ or part of the body have been exhaustively elucidated by skilled investigators and when a change which is alleged to occur in it is flatly contradictory of the firmly-established results of these researches, then naturally the evidence in support of the alleged occurrence must be examined particularly critically. This is exactly the position here ; the mode of development of feathers is very well known, and although I would not be so dogmatic as to assert that a change in the pigmentation of the fully-formed feather is impossible, there can be no

question that is is excessively improbable ; indeed, it would not be too much to say that all workers who have studied the development of feathers are in agreement in rejecting such an idea, and that no reasonable suggestion as to how such changes could conceivably occur, having regard to the way in which a feather is formed, has ever been put forward.

It has been repeatedly pointed out in discussions on this subject, and it cannot be too strongly stressed, that a feather, once formed, is a dead—or if you prefer it, since it is part of a living organism— a non-living structure, in which the originally living material has been completely and solidly cornified, that is converted into a horny substance. The pigment is disposited in the living cells before cornification takes place and becomes enclosed in the cornified substance. There is no channel or other means by which new pigment could get into the substance of the feather or what is there get out or shift its position. This only leaves the possibility of a transformation *in situ*, but this would not accouut for the sort of changes which are supposed to take place. Mr. Harrison has alluded to the changes of colour which may occur in cabinet skins, but these are in no way comparable ; they are trifling changes of the nature of fading or bleaching or of some slow chemical change such as, perhaps, oxidation of the pigment, whereas I think it is quite safe to say that the kind of changes now suggested, involving the development of black bars and other striking transformations, could only be produced by an entirely new deposition of pigment.

A further point on which some misapprehension seems to prevail concerns the possible bearing on the subject of discussion of the question whether the vascular pulp has or has not been withdrawn from the quill of a particular feather. In a recently formed feather, as we have been reminded, this vascular pulp still extends into the base of the hollow quill (though subsequently it shrinks back completely), and it seems to be suggested that so long as it persists it would at least be easier to imagine a passing of new pigment into the feather than when it has withdrawn. But this is emphatically not so. The presence or absence of this vascular filling in the base of the quill is useful as indicating that a feather possessing it is recently formed, but except for this point it has absolutely no relevance in the present discussion. The structure of the feather before and after the withdrawal of the pulp is precisely the same, for the feather forms from the tip downwards and the whole of the vane or coloured part with its shaft or rachis (which is solid from the outset) are fully formed and cornified before the hollow quill appears.

Having regard to these considerations it is certainly not unreasonable to ask that any ornithologists seriously advocating the resuscitation of

the theory of colour change without moult should *either* carefully study the known facts about the minute structure and development of feathers and show in what way the universal opinion of everyone who has studied these things at first hand, that such changes are precluded by the structure of the feather, is, or might be, at fault, or else marshal the evidence that they *do* occur (and that the appearances cannot be accounted for in terms of what I may call the orthodox view of plumage changes) in a really unequivocal manner. Certainly this has never yet been done. All the evidence we have seen tonight, and all the rest of the same kind that others have brought forward in the past, is open to the inescapable drawback that it consists entirely of different individual feathers from different individual dead birds; there is no proof whatever—or even, I would say, very good *prima facie* evidence—that the colour or pattern of any given feather has ever been different from what we now see. Too little allowance seems to me to be made for individual variations and possibly for others which may depend on age, sex, physical condition and other factors. It is at least certain that considerable variations do occur in the timing of the moult, since it is possible to see waders in practically full summer and practically full winter plumage on the same day. No doubt in some individuals some feathers of the new plumage may begin to come in much earlier than others, and there seems no reason why such precociously formed feathers should not be quite appreciably abraded (like one we have seen tonight) before the main moult sets in. We are told that this would mean that feathers of the spring type would have to have been formed at an earlier date than in fact they are ever seen to be, but this is not a convincing line of argument. Mr. Harrison agrees that there are no precise observations to show what is the minimum time in which a given type of feather may reach a given degree of abrasion; nor have we any detailed particulars as to the range of dates at which the first feathers of the spring pattern may appear, the proportion of individuals in which the appearances he describes occur, or other equally relevant points. The whole of the evidence is entirely circumstantial and unprecise, and it is difficult to see how evidence based on skins can be otherwise, except possibly after the most exhaustive study of a very large material.

In fact supposing—contrary to my own conviction—that such changes do occur, it is clear that the only way to demonstrate them beyond any possible doubt is to keep birds in confinement and to provide proof of the transformation by regular periodical examination and photographing of the *same* feathers, which have been unmistakably marked so that there can be no question of their individual identity. If the

universal rejection for many years past of the theory which Mr. Harrison wishes to revive is really unsound, then it is open to its supporters to settle the matter quite conclusively by direct proof in this way.

I think Mr. Harrison has been very courageous in taking up the advocacy of a generally discarded theory which his own observations have convinced him deserves reconsideration, but it is fair to insist that what we have heard and seen tonight go no further towards establishing it than did the arguments of earlier advocates, and I am quite certain that the only really conclusive method of carrying the matter any further is the one I have just mentioned.

In subsequent discussion Mr. Tucker pointed out that feathers showing the winter pattern in the terminal part and the summer one towards the base not only do not support the theory of colour change without moult, but are very well understood, changes of this kind having been the subject of much experimental study. The pigmentation of feathers is largely controlled by hormones, chemical substances secreted by the reproductive and other organs and circulating in the blood. The colour and pattern of a given feather are dependent (subject to certain qualifications which need not be elaborated now) on the hormonic set-up at the time of its formation. If the hormonic content of the blood changes from what may be called the winter plumage condition to the summer plumage one while a feather is actually being formed, then, since the process of formation of a feather proceeds, as already noted, from tip to base, the terminal part of the feather will show the winter colour and pattern and the base the summer ones. Changes of this kind have been chiefly studied in relation to the sex hormones in birds in which the female plumage is determined by the hormone liberated by the ovary or to that of the thyroid gland, which also influences pigmentation. In such cases a change from, for example, the male pattern in the terminal part to the female pattern in the basal part of a feather can be induced by appropriately timed artificial administration of hormone. It cannot be doubted that the situation is essentially similar in regard to seasonal plumage differences. It might be added that in all the great body of experimental work on the lines just mentioned in artificially manipulating feather colours and patterns no case has ever been found of colour or pattern already laid down being altered.

Dr. J. M. Harrison made the following remarks :—

As a small contribution to this interesting discussion I am showing you an example of an Icelandic Redshank, which I collected on January 22 of this year in north Kent. As you will see, it is already assuming some

spring plumage. Knowing that the subject under discussion to night was occupying my son's close attention, you may well realise that I took particular pains to inspect the inner cutaneous surface very carefully when I prepared the specimen. I can assure you very positively that this showed absolutely no sign of any new feathers growing, that is to say the bird was not in moult, although as you can see from its plumage it is acquiring its spring dress. However, in order that you may examine and confirm this fact for yourselves I have opened the skin and have removed the filling, in order to expose the feather tracts, which you will see are beset with the quills of old feathers.

From this observation it would seem impossible to avoid the conclusion that a feather can assume a colour change without a moult.

Dr. G. Carmichael-Low, Mr. C. W. Mackworth-Praed, Lt.-Col. W. P. C. Tenison and Lt.-Cmdr. C. P. Staples also took part in the discussion.

A new race of Stone Curlew from Morocco.

Col. R. Meinertzhagen sent the following description :—

Burhinus œdicnemus theresæ, subsp. nov.

Description.—Whole upper parts suffused reddish, much redder, not so grey as British specimens ; breast also considerably redder than any British specimens.

Distribution.—So far only known from western Morocco.

Type.—In the Meinertzhagen collection. Male adult, Tiznit, south-western Morocco. 6 November, 1938.

Measurements of type.—Wing 242 ; culmen from base 40 mm.

Remarks.—The general tendency to reddish coloration in all races from Morocco is reflected in the Stone Curlew. Three from a party of several dozen were collected and all agree with the type. I hesitated describing this race, thinking they might be migrants from somewhere, but having examined the whole series in the Berlin, Leyden and British Museums together with many in my own collection, I can find nothing approaching the red coloration.

From *B. o. saharae* (Reichenow), which is a pale grey race, they are naturally ever so much redder. *Charadrius œdicnemus* was described by Linnæus from England—" Habitat in Anglia." As neotype I make an adult female in my collection, obtained at Dunwich, Suffolk on 29 August, 1935.

The western European races of Acanthis flavirostris (Linnæus).

Col. R. Meinertzhagen and Mr. P. A. Clancey sent the following note :—

I have before me :

Three from Peak District, Derbyshire.
Sixteen from North and South Uist.
Four from Mull, West Scotland.
Two from Sutherlandshire.
Two from Lancashire.
Two from Upsala, Sweden.
Four from Bremen.
Four from West Ireland.

Scandinavian and German birds are usually not so dark above as Scottish and North of England birds though individuals agree perfectly : in series the difference is noticeable at a glance. I therefore recognize the British Twite as *Acanthis flavirostris pipilans* (Latham) : Peak District, Derbyshire.

Outer Hebridean birds, *A. f. bensonorum* Meinertzhagen, South Uist, do not differ from topotypical *A. f. pipilans* nor from Scottish mainland birds, though here again individuals can be picked out which exactly match Swedish specimens.

The four west Ireland birds agree best with *A. f. flavirostris* though they tend to be even greyer and slightly smaller. They were obtained in mid-October in the extreme west of Co. Kerry and it is most unlikely that they are migrants from the Continent. Before deciding their status I should like to see a larger series.

The draft was submitted to Mr. Clancey, who adds the following comment :—

I am indebted to Col. Meinertzhagen for this opportunity to express my views on the two named British races of *Acanthis flavirostris* (Linnæus).

Series of fresh autumn birds collected on the Lancashire moors near Burnley in September 1946 and 1947, in addition to specimens from the Scottish mainland, have enabled me to assess the diagnostic characters of the race *Acanthis flavirostris pipilans* (Latham), 1787 : The Peak of Derbyshire, England. Of *Acanthis flavirostris bensonorum* Meinertzhagen, 1934 : South Uist, Outer Hebrides, I have examined material collected in South Uist (Clancey Coll.) and north Uist (ex-Meinertzhagen Coll.).

I am of the opinion that the correct interpretation of the situation is that in *A. f. pipilans* and *A. f. bensonorum* we are dealing with two quite distinct forms and that Meinertzhagen was perfectly right when, in 1934, he separated the Outer Hebridean race. In fresh, clean plumage *A. f. pipilans* is altogether more tawny and richer than the Outer Hebridean race, *A. f. bensonorum*, which is colder in tone throughout and with blacker striations. These distinctions are also most convincingly exhibited by the juveniles of the two races. There is, as already indicated by Meinertzhagen (*vide supra*), a measure of individual variation, but it is insufficient to warrant the rejection of *A. f. bensonorum*. Some Outer Hebridean birds certainly come near to *Acanthis flavirostris flavirostris* (Linnæus), 1758 : Sweden, but this similarity is apparently accidental, because an examination of a not inadequate series of juveniles reveals no such divergent trend in this important plumage.

The Report of the B. O. U. List Committee, 'Ibis,' 1937, p. 400, in which *A. f. bensonorum* is synonymized under *A. f. pipilans*, is understandable in view of the fact that in the breeding season the two forms are hard to differentiate.

I would define the ranges of the two *Acanthis flavirostris* races discussed above as follows :—

Acanthis flavirostris pipilans (Latham), 1787 : The Peak of Derbyshire, England.

Northern parts of England, Wales (very rare), Scottish mainland (see also under *A. f. bensonorum*).

Acanthis flavirostris bensonorum Meinertzhagen, 1934 : South Uist, Outer Hebrides.

Islands of the Outer Hebridean group. Perhaps to most Inner Hebrides and parts of western Scotland.

On the validity and range of the race Anthus pratensis whistleri Clancey.

Mr. P. A. Clancey sent the following note :—

Meinertzhagen, Bull. B. O. C. 67 (1947), pp. 94–95, discussed the question of the validity of *Anthus pratensis whistleri* Clancey, 1942 : Dornoch, Sutherlandshire, North Scotland (*vide* Bull. B. O. C. 63 (1942), p. 6), on material in the Meinertzhagen collection and the Royal Scottish Museum. The type and paratypical series (Clancey collection) were not examined.

A. p. whistleri was originally considered to be restricted to northern Scotland, but a recent examination of over one hundred specimens of

birds in breeding, fresh autumn, and juvenile plumages from many parts of Scotland and England, in conjunction with the paratypical series, now shows that the race has a wide distribution in Great Britain and that the characters given for *A. p. whistleri* are perfectly valid. The one striking feature of this large series is the uniformity of the racial characters exhibited by the various plumages when carefully arranged chronologically—in strict contrast to Meinertzhagen's reference (*loc. cit.* p. 94) to great individual variation. It must, however, be admitted that specimens from north of the Grampian mountains (topotypical of *A. p. whistleri*) are slightly more tawny above and not so saturated in tone as those from further south, but the differences are infinitesimal, and I hesitate to introduce a new name for the southern birds at the present juncture, preferring to treat the northern Scottish examples as representative of a divergent population of a widely distributed race.

When compared with topotypical material of *Anthus pratensis pratensis* (Linnæus), 1758: Sweden, fresh autumn specimens of *A. p. whistleri* can be separated readily by the darker and browner tone of the upper-parts and by the blacker centres to the mantle feathers. The wings and tails of *A. p. whistleri* are also darker. On the under-parts *A. p. whistleri* is close to *A. p. pratensis*, but the breast spots tend to be larger and blacker than in most examples of the nomenotypical form. These distinctions are also discernible in the breeding and juvenile dresses. The constancy of these criteria is high (95 per cent.), and in series *A. p. pratensis* and *A. p. whistleri* can be readily separated. I cannot, therefore, support Meinertzhagen's dismissal of *A. p. whistleri*, which I consider to be a highly stable and well-differentiated geographical race.

The known range of *A. p. whistleri* can be defined as Scotland (mainland) and northern districts of England, certainly as far south as Cheshire and south Yorkshire.

Additional races of *A. pratensis* are perhaps separable in Ireland, Outer Hebrides, Orkney and Shetland. South-western Irish specimens in the Meinertzhagen collection are very red on the upper-parts and distinguishable in series from both *A. p. pratensis* and *A. p. whistleri*, and the differences certainly seem to necessitate the introduction of a new name for the Irish bird. The Outer Hebridean *A. pratensis* is most confusing. Three breeding specimens taken in South Uist, Outer Hebrides, in June 1947, are more earthen brown above than *A. p. whistleri* and look like a new form, but two fresh autumn examples from North Uist taken by Meinertzhagen in October 1947, and now in my collection, are the same as Swedish specimens. From Orkney and Shetland only the most fragmentary and unreliable material is available.

The south of England populations are also in need of critical examination and analysis in order to determine their relationship and status.

An Early Oologist: John Drew Salmon, 1802–1859.

By William E. Glegg.

An account of the career of this early oologist is called for as he is not mentioned in ' A Bibliography of British Ornithology.' He was one of the most prominent oologists of his time. Hewitson (2) supplies the earliest indication of Salmon's activities stating that during the spring of 1826 his correspondent, Mr. Salmon, whose collection of eggs forms so attractive an object in the Norwich Museum, shot a pair of Black-winged Stilts (*Himantopus h. himantopus*) at Stoke Ferry, Norfolk. Hewitson includes the name of J. D. Salmon among those who were specially thanked for their assistance in the preparation of Hewitson's well-known oological work. The writings of Alfred Newton demonstrate more fully the position gained by Salmon in the oological world. Newton (3) wrote " The advantage to Wolley of being thus brought into direct and friendly connexion with all the chief collectors of the time, Hancock, Pitman, Salmon, Sclater, Tuke and Wilmot—is not to be overrated." Salmon's name appears frequently in ' Ootheca Wolleyana,' and we notice a tribute by John Wolley under the Bustard to Salmon's thoroughness. Salmon contributed notes with some regularity from 1829 to 1850, firstly in Loudon's Mag. of Nat. Hist. and later in ' The Zoologist ' and also in the ' Naturalist ' (N. Wood). The most notable among these are " Observations on the Eggs and Birds which were met with in a Three Weeks' Sojourn (from 30 May to 21 June, 1831) in the Orkney Islands," Loudon, vol. 5, pp. 415–25, and " Notice of the arrival of Twenty-nine Migratory Birds in the neighbourhood of Thetford, Norfolk, etc.", Loudon, vol. 9, pp. 520–28. He wrote for N. Wood's " British Song Birds " 1836. His notes were addressed from Bourne, Lincolnshire in 1832, Stoke Ferry and Thetford, Norfolk, from 1834 to 1837 and Godalming, Surrey, from 1843 to 1849, and from 1853 he lived in the Strand, London. He assisted Newman with ' The Zoologist ' in its infancy. He was a strong supporter of Norwich Museum, of which he was an honorary member. To this museum he presented a collection of British Birds' eggs in February 1859, and on his decease his brothers gave a duplicate collection containing many rare species. This collection forms the nucleus of the general collection of British birds' eggs of Norwich Museum. He left also to this museum his extensive herbarium and his ornithological and botanical diaries made between

1825 and 1837 (6) which are preserved there and were used by T. Southwell for the third volume of 'The Birds of Norfolk.' I have to thank Miss G. V. Barnard, curator, for the foregoing information. The following is an obituary from the Linnean Society (4) :—"John Drew Salmon, Esq., enjoyed considerable distinction as a British Botanist and Ornithologist. He was admitted a Fellow of the Society in the year 1852 and died on the 5th August, 1859, aged 57." Salmon's main collection was bequeathed to the Linnean Society and at the time of his death contained a Great Auk's (*Alca impennis*) egg, but when the collection came to this society, about the end of 1861, it was found that the Great Auk's and other important eggs had been taken, a Swan's (*Cygnus olor*) egg crudely spotted and blotched with ink having been substituted. This strange story has been told in some detail by Prof. A. Newton (3). Salmon's 'MS. Catalogue of Eggs,' now in the British Museum (Natural History), contains many interesting notes on his early period, although in some cases the eggs mentioned are no longer available. He had had at least ten eggs of the Kite (*Milvus m. milvus*) all from Lincolnshire between the years 1835 and 1856 and probably all from Bourne Wood in that county. He writes of this species as follows :—"During my residence at Bourne, Lincolnshire, I was in the habit of seeing almost daily several pairs of this beautiful bird as they soared to a great height in the air and in still repeated circles displayed their peculiar and graceful flight," etc. He had eggs from a nest of a Raven (*Corvus c. corax*) from Oxboro, Norfolk, in 1829 ? He received eggs from Didlington Hall heronry in May 1829 and gives an account of a visit to this heronry on 15 June, 1830. This is probably the earliest reference to this heronry.

A series of eggs from Salmon's main collection has been retained for the national collection and some of these are worthy of mention, particularly some which have not been previously recorded. Golden Eagle (*Aquila chrysaëtos*), one egg, B.M. Reg. No. 1947.2.1, from Hoy, Orkney, July 1833. It is a matter of a hundred years since this species nested in Orkney. He obtained a clutch of four of the Hen Harrier (*Circus c. cyaneus*) in the High Fen, Northwold, Norfolk, in May 1830. One, No. 1947.16.3, of these still remains. Great Bustard (*Otis t. tarda*), one egg, No. 1947.2.3, taken at Massingham Heath, Norfolk, in May 1833 (1). The story of this historical egg has been told at some length by John Wolley (3) and it was figured in the later editions of Hewitson. One egg, No. 1947.16.84, of the Avocet (*Recurvirostra avocetta*), purchased by Salmon in 1834 and said to have been taken at Horsey, Norfolk, where it bred in considerable numbers. An egg, No. 1947.2.2, of the Black-tailed Godwit (*Limosa l. limosa*), which was taken in Norfolk and dated

June 1833. Stevenson (5) assumed that this species ceased to breed in Norfolk between 1829 and 1835. Salmon adds the following extract from a letter, dated April 16, 1833, from J. D. Hoy, from whom he received an egg of this species : " The black-tailed Godwit breeds in the reedy tracts bordering Whittlesea Mere between the village of Holme and Ramsey. I obtained the eggs from some marshy ground on the borders of the river " ' Tene ? ' abt 10 miles above Yarmouth." Salmon acquired the clutch of seven eggs of Baillon's Crake (*Porzana pusillus intermedius*) taken in the Isle of Ely in August 1858 and three, No. 1947.16.94, of these eggs are in the national collection. He visited Crowland Wash, Lincolnshire in May 1832 and obtained a large series of the eggs of the Black Tern (*Chlidonias n. niger*) where, he adds, " This bird was breeding in abundance." Some of these eggs were figured by Hewitson and five, No. 1947.16.100, of them still remain.

References.

(1) Bidwell, E. (1885). Trans. Nor. and Norwich Nat. Soc. vol. iv, pp. 140–2.
(2) Hewitson, W. C. (1846). ' Eggs of British Birds,' vol. i, p. xvi ; vol. 2, p. 298.
(3) Newton, A. (1864–1907). ' Ootheca Wolleyana,' pt. 2, p. xv ; pt. 3, pp. 68, 374.
(4) Proceedings Linnean Society of London, 1861, vol. v, p. xxix ; 1862, vol. 6, p. liv.
(5) Stevenson, H. (1870). ' The Birds of Norfolk,' vol. 2, p. 249.
(6) Trans. Nor. and Norwich Nat. Soc., 1877, vol. ii, p. 420.

Notes on Eastern African Birds.

Captain C. H. B. Grant and Mr. C. W. Macworth-Praed sent the following ten notes :—

(1) On the status of *Centropus grillii* Hartlaub, now *Centropus toulou grillii* and *Centropus superciliosus loandæ* C. Grant.

Messrs. Sassi and Zimmer in Ann. Nat. Mus. Wien, 1941, p. 272, discuss the plumage of a female *Centropus* from north-eastern Tanganyika Territory and come to the surprising conclusion that possibly *Centropus superciliosus* and *Centropus grillii* are conspecific, because this specimen, which they believe to be *C. superciliosus loandæ* has a few black feathers here and there. Apparently they are unaware that the non-breeding dress of *C. grillii* is very similar to that of *C. superciliosus*, and there is no doubt in our minds the specimen they discuss is a *C. grillii*.

We would point out that *C. grillii* has a shorter tail and a smaller bill than *C. superciliosus loandæ*, though the wing measurements are the same, i. e. *C. s. loandæ*, 146–176 mm., and *C. toulou grillii* 143–175 mm.

(2) On the status of the co-called type of *Andropadus oleaginus* Peters, J. f. O. 1868, p. 133 : Lorenço Marques, Portuguese East Africa.

Through the kindness of Dr. Stresemann, of the Berlin Museum, we have had on loan this type specimen. It has two different identification labels, one, a Museum label inscribed " *Andropadus insularis*, Hartl. 1862, ♀. *Andropadus oleaginus* Ptrs. 1868, Mith. No. 1, 1846 (Inhambane) 3801, Lorenço Marques—Peters S." and the other inscribed in original handwriting " Krebs, No. 314, ix. *L. importunus* V. Atura importano L. Importan de Veill. probe distinguendat." The writing is bad so the above may not be the exact wording.

We have carefully compared this specimen with the various species of Bulbuls, and find that it agrees very well with *Andropadus importunus noomei* Roberts, especially below, though above it is more olivaceous brown which may be due to change by exposure in a public gallery as a mounted specimen. If it is that race, and it appears that it is, then it could not have been collected by Peters, nor perhaps by Krebs, who was a farmer at Uitenhage outside the distribution of *A. i. noomei*.

The Berlin Museum authorities have attached another label on which it is stated that this specimen may have been labelled as the type of *A. oleaginus* by mistake, it being possible that the label had been fixed on a specimen of *A. importunus* collected by Krebs. One thing is quite certain that this specimen is not the type of *A. oleaginus* Peters, nor does it in any case agree with the description given for the underparts, *i. e.* below paler olive-green with faint bars, belly bright yellow, under tail-coverts bright yellow, inner webs of first and second tail feathers margined with yellow. This description appears to point to a young bird of some species of Shrike and does not agree with either the young or adult of any known Bulbul. Peters' type specimen appears to have been lost. Therefore *A. oleaginus* Peters must be considered as indeterminate and drops out of nomenclature.

(3) On the status of *Bradypterus salvadorii* Neumann, J. f. O. 1900, p. 304 : Gurui, Mbulu district, northern Tanganyika Territory.

Sclater, Syst. Av. Æthiop. 2, 1930, p. 509, places this as a synonym of *Bradypterus cinnamomeus* (Rüppell).

Through the kindness of Dr. Stresemann, of the Berlin Museum, we have had the loan of the type and find that on the upper side it agrees with a male in the British Museum collection from Kibosho, Mt. Kilimanjaro. Brit. Mus. Reg. No. 1933.3.2.62, and on the underside with a male from the same locality, Brit. Mus. Reg. No. 1933.3.2.61, both

of which are *Sathrocercus cinnamomeus rufoflavidus* Reichenow & Neumann. We therefore place *Bradypterus salvadorii* Neumann, as a synonym of *Sathrocercus cinnamomeus rufoflavidus* Reichenow & Neumann.

(4) On the status of *Passer griseus turkanæ* Granvik, Rev. Zool. Bot. Afr. 25, 1934, p. 150 : Lotonok, Turkana, north-western Kenya Colony, and *Passer griseus tertale* Benson, Bull. B. O. C. 63, 1942, p. 17 : Yavello, southern Abyssinia.

The British Museum has one of Granvik's specimens and the type and series collected by Benson, all of which are *Passer gongonensis* (Oustalet) and not *Passer griseus*.

We have compared these with the British Museum series of *P. gongonensis* and find that they cannot be separated from the nominate race. We therefore place both *Passer griseus turkanæ* Granvik and *Passer griseus tertale* Benson as synonyms of *Passer gongonensis gongonensis* (Oustalet).

(5) On the status of *Euplectes zavattorii* Moltoni, Real. Acc. d'Italia, 1943, p. 191 : Gondaraba, southern Abyssinia.

This species is founded on a single specimen. The coloured plate of this bird in two positions clearly shows that it is a melanistic variety of *Euplectes orix pusilla* (Hartert). We therefore place *Euplectes zavattarii* Moltoni as a synonym of *Euplectes orix pusilla* (Hartert).

(6) On the type-locality of *Hyphantornis castaneigula* Cabanis, J. f. O. 1884, p. 240.

Cabanis states that the type was obtained from Holub and came from the Zambezi (Diamond Fields). This appears to be a similar case to that discussed by us under *Treron schalowi* Reichenow, in Bull. B. O. C. 57, 1937, p. 74, except that Cabanis definitely gives Zambezi. Holub first struck the Zambezi River at Impalera, see map in vol. 1, 'Seven Years in South Africa,' 1881. We therefore propose that the exact type-locality of *Hyphantornis castaneigula* Cabanis, be Impalera, north-eastern Bechuanaland.

(7) On the status of *Fringilla tobaca* Vieillot, Enc. Méth. 3, 1823, p. 969 : Angola.

Vieillot on p. 960 quotes Edwards, Ois. pl. 179. This should be pl. 129, where Edwards' description and plate, in his Oiseaux, 3, p. 129, 1745, agrees with Vieillot's description. On p. 970 Vieillot also names a *Fringilla angolensis* and quotes Edwards' plate 129. This name is

apparently given to the lower figure on plate 129, but it is pre-occupied by *Fringilla angolensis* Linnæus, Syst. Nat. 1758, p. 805.

In the Bull. B. O. C. 60, 1940, p. 53, and p. 90, we drew attention to *Fringilla tobaca* of Vieillot, and to the fact that Grote had already published this change of name in Anz. Orn. Ges. Bayern, 2, 1936, p. 373. Grote does not say that he has studied Edwards' plates. The upper figure in Edwards' plate 129 is the Negaal or Tobaque and is presumably life-size. Both Edwards and Vieillot state that the rump is brilliant yellow and the breast to under tail-coverts are plain dull orange colour, and the description of the head markings agrees with Edwards' plate. It is quite clear that the description and plate are not that of the Yellow-rumped Seed-eater as given by Sclater, Syst. Av. Æthiop. 2, 1930, p. 821, and named by him *Poliospiza angolensis* Gmelin.

As the Yellow-rumped Seed-eater can neither be designated as *Poliospiza angolensis* Gmelin nor as *Poliospiza tobaca* Vieillot, it must bear the next available name, which appears to be *Linaria atrogularis* Smith, Rep. S. Afr. Exp. 1836, p. 49 : Kurrichane, western Transvaal, as correctly used by Friedmann, Bull. 153, U.S. Nat. Mus. 1937, p. 469, and by Roberts, Bds. S. Afr. 1940, p. 366. Although the live bird which Edwards figured reached England through Lisbon, it would not appear that it came from the coast of Angola.

(8) On the type-locality of *Estrilda ochrogaster* Salvadori, Boll. Mus. Zool. Anat. Torino, 12, No. 287, 1897.

Salvadori gives only Abyssinia and states that the type was collected by Calvi.

All the known information on Calvi is given in ' The Ibis,' 1939, p. 556, where also we stated that previous to 1865 explorers and missionaries confined their activities to Eritrea and northern Abyssinia. We therefore propose to fix the type-locality of *Estrilda ochrogaster* Salvadori as Northern Abyssinia.

(9) On the plumages of the male of *Spinus citrinelloides* (Rüppell).

We find in the males of this species two rather different looking dresses in birds taken in the same month. Both dresses appear to be adult and do not appear to be seasonal. In the one there is a narrow black band on the forehead ; a yellow superciliary stripe ; upper parts yellow-green with narrow black streaks. In the other there is no black band on forehead ; no superciliary stripe ; upper parts darker, less yellow-green, with wider, more distinct black streaks. In Rev. Zool. et Bot. Afr. 25, 1, 1934, p. 188, Granvik records dissimilar dresses for the females

he collected on Mt. Elgon ; but the British Museum series of females does not show these, as all are similar to the darker backed male dress ; lores to ear-coverts, chin and upper throat not black or slightly dusky greenish ; below distinctly striped on throat, chest and flanks. We merely wish to draw attention to these plumages and can offer no useful comments.

(10) On the status of *Serinus sulphuratus shelleyi* Neumann, O. M., 1903 p. 184 : Kafuro, Karagwe, Bukoba district, north-western Tanganyika Territory.

Neumann compares this race to both *Serinus flaviventris* Swainson and *Serinus sulphuratus sharpii* Neumann, but we are unable to see that there is any difference in colour between birds from Uganda and Kenya Colony to Nyasaland and Portuguese East Africa. Mr. C. W. Benson measured a large number and has kindly left the measurements with us. He especially noted the comparatively small size of Bukoba and Mwanza birds. We have also measured the wings of all available specimens, measurements are as follows :—

Uganda males 75–79, females 71–76 ; western Kenya Colony males 78–81, females 76–81 ; eastern Kenya Colony males 78–84, females 79–83 ; Bukoba district, Tanganyika Territory males 74–76 ; west of Mt. Kilimanjaro male 84 ; south-western Tanganyika Territory males 78–80 ; south central Tanganyika Territory males 75–80, females 77–79 ; south-eastern Belgian Congo males 75–77, females 73–80 ; north-eastern Northern Rhodesia males 77–78, females 77 ; western Nyasaland males 73–79, females 74–80 ; southern Nyasaland males 72–76, females 70–76 ; Tete area, Portuguese East Africa males 75–76 ; eastern Portuguese East Africa north of the Zambezi River, males 71–74, females 73 , Southern Rhodesia males 77–81, females 74–76 ; Angola males 72–74 mm.

Certainly the male from west of Mt. Kilimanjaro has a large wing of 84 and this is equalled in eastern Kenya Colony, but we find birds of 80 and 81 mm. in western Kenya Colony, south western and south central Tanganyika Territory, south-eastern Belgian Congo, western Nyasaland and Southern Rhodesia. Comparing only birds from the Bukoba area and west of Mt. Kilimanjaro there does appear to be a size difference between the two named races, but if we take into consideration the measurements over the whole range we find such an overlap that racial distinction on size does not work out geographically and we are of opinion that *Serinus sulphuratus shelleyi* Neumann should be placed as a synonym of *Serinus sulphuratus sharpii* Neumann.

1946. £ s. d.		£ s. d.	£ s. d.
	To Balance, September 1, 1946:—		
181 14 9	Cash at Bank, Current a/c .	177 7 6	
1 4 11	Cash in Hands of Treasurer.	9 3	
400 0 0	500 National Savings Certificates at cost, held by Bank	400 0 0	
255 13 4	£256 14*s.* 1*d.* 3½% War Loan at cost	255 13 4	
100 0 0	£100 3% Savings Bonds 1960/70 at cost	100 0 0	
938 13 0			933 10 1
	,, Entrance Fees of 19 Members at £1 0*s.* 0*d.*		
13 0 0	1 Member at £1 1*s.* 0*d.* 20 1 0		
	,, Subscriptions :—		
131 5 0	144 Members at £1 1*s.* 0*d.* ... 151 4 0		
	In Advance ... 3 3 0		
		174 8 0	
45 13 4	Sales of 'Bulletin'	50 15 6	
	,, Interest on Investments :—		
8 19 8	3½% War Loan .. 8 19 8		
3 0 0	3% Savings Bonds 1960/70 ..... 3 0 0		
		11 19 8	
			237 3 2
£1,140 11 0			£1,170 13 3

1946. £ s. d.		£ s. d.	£ s. d.
159 14 6	By Publication of 'Bulletin' (not a full year)		100 0 10
	,, Distribution of 'Bulletins' and Printing, etc.		25 3 9
	,, Compiling Index and List of Authors to 'Bulletin' (vols. lii.–lxiii.)	....	50 0 0
6 7 1	,, Ditto Current Vol.	....	6 7 1
18 5 0	,, Hire of Lantern, etc., at Meetings	....	17 1 6
10 10 0	,, Zoological Society of London : Contribution towards cost of 'Zoological Record', vol. 82	....	10 10 0
12 4 4	,, Miscellaneous Expenditure, including Audit Fee, Printing, Stationery and Postages ..	....	10 6 2
207 0 11			219 9 4
	,, Balance, August 31, 1947 :—		
177 7 6	Cash at Bank, Current a/c	194 18 6	
9 3	Cash in hands of Treasurer	12 1	
400 0 0	500 National Savings Certificates at cost, held by Bank	400 0 0	
255 13 4	£256 14*s.* 1*d.* 3½% War Loan at cost .	255 13 4	
100 0 0	£100 3% Savings Bonds 1960/70 at cost ...	100 0 0	
933 10 1			951 3 11
£1,140 11 0			£1,170 13 3

E. P. LEACH, *Hon. Treasurer.*

We have examined the foregoing Account with the Books and Vouchers of the Club for the year ended August 31, 1947, and certify it to be in accordance therewith. We have also verified the Cash at Bank and the Securities.

FINSBURY CIRCUS HOUSE,
BLOMFIELD STREET, LONDON, E.C. 2.
November 6, 1947

W. B. KEEN & CO.,
Chartered Accountants

Notice.

The next Meeting of the Club will be held at the Rembrandt Hotel, South Kensington, S.W. 7, on Wednesday, 17 December, 1947. Dinner at 6.30 P.M.

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

4 - JUL 1948
PURCHASED

Volume 68.
No. 3.

The four-hundred-and-seventy-second Meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, S.W.7, on Wednesday, 17 December, 1947, with dinner at 6.30 P.M.

Chairman : Dr. J. M. HARRISON.

Members present :—Miss C. M. ACLAND ; Miss P. BARCLAY SMITH ; Mrs. R. BARNES ; F. J. F. BARRINGTON ; A. W. BOYD ; Mrs. G. CHADWYCK-HEALEY ; E. COHEN ; C. T. DALGETY ; J. FISHER ; W. E. GLEGG (*Hon. Secretary*) ; Miss C. E. GODMAN ; Miss E. M. GODMAN (*Vice-Chairman*) ; Capt. C. H. B. GRANT (*Editor*) ; Dr. J. G. HARRISON ; R. E. HEATH ; P. A. D. HOLLOM ; N. B. KINNEAR ; D. LACK ; Miss E. P. LEACH ; Miss C. LONGFIELD ; Dr. G. CARMICHAEL LOW ; Dr. P. R. LOWE ; Sir PHILIP MANSON-BAHR ; G. M. MATHEWS ; E. S. MAY ; E. M. NICHOLSON ; E. R. PARRINDER ; Col. A. W. PAYN ; Lieut. R. A. H. REYNOLDS ; Miss G. M. RHODES ; B. B. ROBERTS ; PETER SCOTT ; D. SETH-SMITH ; Lt.-Cmdr. C. P. STAPLES ; Dr. A. LANDSBOROUGH THOMSON ; C. N. WALTER ; A. WILLIAMS ; C. DE WORMS.

Guest of the Club :—B. J. MARPLES.

Guests :—R. ATKINSON ; E. ST. J. BLUNT ; R. A. H. COOMBES ; R. D. ETCHÉCOPAR ; Miss N. J. GRANT ; G. STOUGHTON HARRIS ; E. HOSKING ; Miss C. G. P. JOHNSTON ; Miss E. KINNEAR ; J. C. M. MCLEAN ; Mrs. D. SETH SMITH ; Miss R. SHUTER ; Mrs. L. L. STAPLES ; G. THOMSON.

Members, 39 ; Guests of the Club, 1 ; Guests, 14 ; Total, 54.

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St. Kilda, 1947.

Mr. James Fisher made the following remarks and exhibited slides :—

The islands of St. Kilda, the westernmost of the Outer Hebrides, lie further from the mainland than any other part of Britain. They were permanently inhabited until 28 August 1930, since when human beings lived on them only in the summer months until 1939. It is doubtful whether anybody has slept on the islands between October 1939 and June 1947.

They constitute a remarkable natural sanctuary, and a natural experiment, since the fortunes of animals living entirely apart from man can be studied. Several of the indigenous animals (some of which are famous) show the effect of geographical isolation.

In July and August 1931, T. H. Harrisson and David Lack, of the Oxford–Cambridge Expedition (Scot. Nat. 1934 : 59–69), with the help of others, made an approximate census of the breeding land-birds, and some of the breeding sea-birds, of the islands of the St. Kilda group. They were somewhat handicapped by the fact that they could not start work until the Universities' Long Vacation, by which time many of the species had almost completed their breeding-cycle. Their census, made less than a year after the evacuation of St. Kilda by man, established the situation at a time when the effect of man was still powerful.

In May and June 1939, E. M. Nicholson and J. Fisher, with the help of Messrs. J. S. Huxley, C. P. Blacker and D. W. Robertson, repeated the census of 1931 (Brit. Birds, 34 : 29–35).

From 10 to 13, and from 16 to 19 June 1947, J. Fisher, with the help of Messrs. R. Atkinson and J. Naish, repeated the census of the land-birds of Hirta (the main island of St. Kilda), and collected notes on mammals and sea-birds. St. Kilda was also visited and photographed by flying-boat on 30 July and on 29 September 1947.

Results of the 1947 expedition, and a detailed comparison of the results of the original census and the two eighth-year repeats, will be published elsewhere. Meanwhile, the following is a short summary of the status of the resident birds and mammals.

Some burrowing species defy census work, and have not yet been accurately counted, or sample-counted, on St. Kilda. We do not know whether any change has taken place in the numbers of the Storm-Petrel, *Hydrobates pelagicus* (Linnæus), Leach's Petrel, *Oceanodroma leucorrhoa* (Vieillot), Manx Shearwater, *Puffinus puffinus* (Brünnich), or Puffin, *Fratercula arctica* (Linnæus). In 1939 and 1947 we did not, indeed, have the opportunity to look for the nests of the Storm-Petrel on St. Kilda. Leach's Petrel is known to breed on the island of Dùn, where the colony

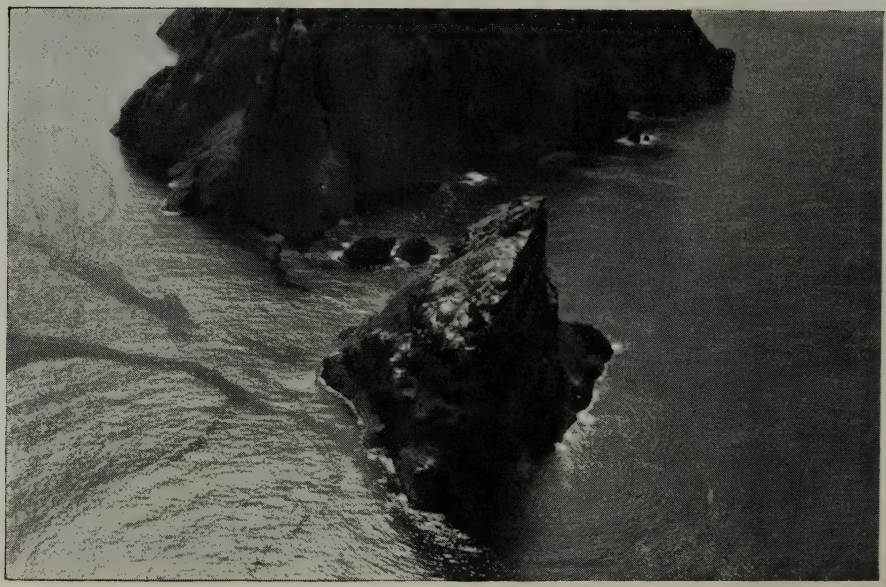
ST. KILDA: *Air photographs by Eric Hosking*, 30 *July*, 1947.

Dùn, and the Village Bay of Hirta, from S.S.E.

Conachair of Hirta, 1397 ft., from E., the Island of Soay to N.W.

ST. KILDA: *Air photographs by Eric Hosking*, 30 *July*, 1947.

Gannets' nests on the top face of Stac Lee, from S.W.



Stac an Armin and the W. precipice of Boreray, from N.N.W.

appeared to be in its normal strength in 1947 ; but there are many parts of Hirta, as well as of the less well-explored islands of Soay and Boreray, which have not been searched yet, by anybody, for the nests of this rare bird : much the same applies to the Manx Shearwater, which has been heard, at night, in 1939 and 1947, over the village, and in 1947 from the Cambir, the north-west promontory of Hirta, but whose breeding haunts on St. Kilda are practically unknown. We know that the numbers of the Puffin, which was once the chief source of meat in the diet of the old St. Kildans, are extraordinary, but we cannot tell whether they have changed. I judged each of the following six puffin-slopes of St. Kilda to contain (in 1947) more burrows than any colony I had seen elsewhere in Britain (even more than Garbh Eilean of the Shiant Isles, which we had explored in the previous week) :—the north face of Conachair, the highest cliff in Britain, on the north side of Hirta ; the island of Dùn ; the Carn Mòr on Hirta's south-west apsect ; the sides of the Cambir of Hirta ; the island of Soay ; the island of Boreray.

There appears to have been no significant or detectable change between the years in the numbers of the Raven, *Corvus corax* Linnæus, Hooded Crow, *Corvus cornix* Linnæus, Twite, *Carduelis flavirostris* (Linnæus), Meadow-Pipit, *Anthus pratensis* Linnæus, Rock-Pipit, *Anthus spinoletta* (Linnæus), Wheatear, *Œnanthe œnanthe* (Linnæus), St. Kilda Wren, *Troglodytes t. hirtensis* Seebohm, Peregrine, *Falco peregrinus* Tunstall, Great Black-backed Gull, *Larus marinus* Linnæus, Kittiwake, *Rissa tridactyla* (Linnæus) or Guillemot, *Uria aalge* (Pontoppidan). The numbers of the twite on Hirta, for instance, were remarkably constant through the years, the species being concentrated mostly in the old village and round its walls and cletts * ; in 1931, 13 pairs, in 1939, 10 or 11, in 1947, 13 were found. The six pairs of meadow-pipits which were probably breeding on Hirta in 1947 were found on slopes of plain grass or heather ; rock-pipits were found on the cliffs, and otherwise only where there were broken rocks or talus, or cletts (which simulate rocks) : the habitat-division between these two species was clear, as it was in 1939 ; perhaps the reported overlap in 1931 was due to the lateness of the season and the break-up of the breeding-territories of the two species.

In 1939 and 1947 we found the utmost difficulty in mapping all the territories of the St. Kilda wrens. In spite of their penetrating song, which could be heard above the roll of the Atlantic from cliff-bottoms a thousand feet below the observer, the wrens eluded us in blind corners and in inaccessible parts of the steep seaward slopes. In 1931 it is probable that by July many of the wrens had stopped steady song,

* Stone drying-houses about 20 ft. long and about 8 ft. high, of which there are about 600 on the islands of St. Kilda.

and the expedition's estimate of the number of territories in the steeper peripheral parts of Hirta must have been somewhat hazardous ; certainly in 1939 and 1947, helped as we were by loud and consistent singers, we failed to make a sure survey of the wrens in these places ; and we do not see how anybody could make one without a long campaign of piton and rope climbing. However, a comparison of the figures, in the different years, for the village and the more accessible parts of Hirta, is useful and interesting : in 1931 T. H. Harrisson and J. Buchan found 45 pairs altogether on Hirta, of which 12 were in the village. In 1938 Robert Atkinson, ashore on Hirta for some time in June, found 12 nests, with 4 more which were probably cocks, and 2 more which were probably of the previous season, in the village in cletts and walls. In 1939 we found 12 pairs in the village. In 1947 I found 10 pairs in the village. The numbers of the St. Kilda wren seem to be constant : the only important difference in 1947 was that, for the first time apparently, wrens were nesting up the hill behind the village, and in the Great Glen, an entirely separate valley occupying the western part of Hirta and running in the opposite direction from the broad valley-basin of the village and village bay. The total population of this interesting and famous subspecies was thought to be 68 pairs by the 1931 expedition ; we have found evidence from the village sample that the population has not changed in sixteen years ; but what it really *is*, is another matter. Certainly over a hundred, but under two hundred individual adult St. Kilda wrens pair up and start a breeding-cycle each year ; but the population cannot be placed within closer limits until the mid-cliffs and cliff-bottoms have been fully explored.

Two birds have markedly increased throughout the sixteen-year period, the Starling, *Sturnus vulgaris* Linnæus, and the Eider, *Somateria mollissima* (Linnæus). In 1931 the expedition found 4 starling families in the Village Basin, none in the Great Glen, and 5 on the cliffs. In 1939 we found 15–17 pairs in the village basin, 2 in the glen and 8 on the cliffs. In 1947 I found 29 pairs in the village basin, 10 in the glen, and 11 on the cliffs. The starlings were feeding young at the time, and I found eleven nests in cletts and walls and broken cliff-top rocks, in a couple of hours ; I was guided to them by the clamour of young. The starling population is concentrated near the main grazing grounds of the sheep. In 1939 there were about 42 starlings flying about in flocks, not attached to territories, and in 1947 there were 56. A large number of these were certainly members of the pairs whose territories we had found, and were seen to leave the flocks with food for their young. It seems clear that the starling population of Hirta may have trebled between 1931 and 1939, and doubled between 1939 and 1947.

Only two pairs of eiders with young were seen in Village Bay in 1931. By 1939 there had been a great increase, and nearly 50 birds were seen. In 1947 eiders were breeding up to 800 feet on the hills of Hirta, and on Dùn Atkinson and Naish found a colony of 11 nests, some of which were nearly touching. There is no doubt that the increase has continued. When the St. Kildans were in residence they robbed eider nests.

The numbers of the Shag, *Phalacrocorax aristotelis* (Linnæus), and the Razorbill, *Alca torda* Linnæus, appear to have increased between 1931 and 1939, and to have stayed constant since. It is possible that the 1931 expedition may have overlooked some razorbills, which in many parts of St. Kilda nest under cover in broken rocks. Several other species of birds remained approximately constant in population between 1931 and 1939, but increased between 1939 and 1947 ; the Gannet, *Sula bassana* (Linnæus), Oystercatcher, *Hæmatopus ostralegus* (Linnæus), Herring-gull, *Larus argentatus* Pontoppidan, and Lesser Black-backed Gull, *Larus fuscus* Linnæus. The population of breeding gannets may have been about 16,500 pairs in 1931, and was about 16,900 pairs in 1939. Study of aerial photographs of the gannet stacks has shown an increase in subsequent years. By 1947 the Gannets (which breed only on Boreray, Stac Lee and Stac an Armin) had spread to parts of Sunadal (E. Boreray) and south-west Boreray not inhabited in 1939. I estimated the 1947 population as at least 20,000 pairs ; the increase seemed general and the birds were distinctly denser on Stac an Armin, and north and west Boreray, than they were in 1939 ; this observation is borne out by a study of photographs.

The recent increase of the lesser black-back on St. Kilda is interesting. It has hitherto been rare, odd scattered pairs nesting on Hirta. In 1947 Naish found a colony of 15 pairs in the Great Glen, the first real colony of this species to have been observed on St. Kilda.

The Fulmar, *Fulmarus glacialis* (Linnæus), now has nearer thirty than twenty thousand nests on the St. Kilda Islands, judging from the results of sampling in 1947. In 1931 the population was estimated as 25,500 breeding pairs, and in 1939 as 20,780 ; there is no doubt about the increase between 1939 and 1947.

The Snipe, *Capella gallinago* (Linnæus), on Hirta increased remarkably from 1931 to 1939, but regressed from 1939 to 1947. In 1931 three pairs bred on Hirta. In 1939 at least 30 pairs, and probably more than 30, did so : about 20 of these pairs were in the village, where the grass was then thick and long and boggy. By 1947 the Soay sheep (which increased from a small herd in 1931 to between 500 and 600 in 1939, and numbered certainly over 400 in 1947) had grazed the village grass down ; no longer

was there long grass, and there were only a few rushy patches instead of a wide bog. In 1947 there were eight pairs of Snipe on Hirta, of which only two were nesting within the village wall; away from the village on Hirta the snipe population was the same as it was in 1939, not 1931.

In 1939 the Black Guillemot, *Uria grylle* (Linnæus), looked as if it was on the way to extinction. In 1931 six pairs had been found round Hirta, but in 1939 only a single bird was noted, under Ruaival, the southern promontory of Hirta. In 1947, however, we discovered that Glen Bay was occupied by at least two pairs. The Rock-Dove, *Columba livia* Gmelin, on the other hand, has probably become extinct. We did not see one in a careful exploration of all the coasts from sea and land in 1947. In 1931 only five were seen; in 1939 only two. Through most of its range, this cliff-breeding species forages on cultivated land, and it is now more than seventeen years since any part of St. Kilda was cultivated.

We did, however, find two new breeding-species. Both the Golden Plover, *Pluvialis apricaria* (Linnæus) and the Sky-Lark, *Alauda arvensis* Linnæus, have been seen about the hills of St. Kilda in the breeding-season. Until 1947, however, neither had been proved to breed. On the flat table-land of Mullach Sgar, at about 750 feet above the village, two pairs of golden plovers were found in possession of territories on 11 June. On 19 June, an hour before our departure, J. Naish found, after some searching, a week-old young one. Its parents were identified in the field as of the southern race, *.P a. apricaria*. On 16 June, on the grass meadow of Mullach Mor, near the 1400 feet top of Conachair, the highest point of St. Kilda, I heard a sky-lark singing, and flushed one off eggs.

This concludes the catalogue of the breeding birds of St. Kilda in 1947, of which there were 28 species. Of non-breeding birds we saw two Swallows, *Hirundo rustica* Linnæus, one House-Martin, *Delichon urbica* (Linnæus), four Whimbrel, *Numenius phaeopus* (Linnæus), five Dunlins, *Calidris alpina* (Linnæus), one Common Sandpiper, *Actitis hypoleucos* (Linnæus), and two or more Ringed Plover, *Charadrius hiaticula* Linnæus. We also heard a Corn-Crake, *Crex crex* Linnæus, on two days in a village field, and found the remains of a Lapwing, *Vanellus vanellus* (Linnæus).

Notes were also made on the mammals. Soay and Hirta now have purely Soay sheep; on Boreray is a herd of Blackface between 300 and 400 strong, which has scarcely been touched since 1930, and not at all since 1939. The indigenous subspecies of Field-mouse, *Apodermus sylvaticus hirtensis* Barrett Hamilton, flourishes on Dùn and Hirta, and now lives in the deserted houses. Unfortunately for science, the indigenous House-mouse *Mus musculus muralis* Barrett-Hamilton, can now confidently be pronounced extinct; it is probable that it became so between 1931 and

1939—it had become confined to two houses eleven months after the evacuation. It was probably unable to compete with the *Apodermus* once its winter support, man, had gone. The Grey Seal, *Halichoerus grypus* (Fabricius), haunts the islands, at least through the summer, in some numbers ; now Hirta is deserted it could come ashore to breed in safety in Village Bay : it has not, however, started to do so yet, for on 29 September close observation from the air disclosed many swimming in the village bay, but none hauled out at the possible places, and no calves in their white coats.

The owner of St. Kilda, the Marquis of Bute, gave us permission to visit the islands and investigate them, and we would particularly like to thank him for his kindness. Lord Bute is a keen naturalist and keeps St. Kilda as a complete sanctuary, on which any kind of collecting is forbidden. It is to be hoped that, for the sake of science as well as of the protection of nature, his wishes are respected and St. Kilda is left undisturbed, a perfect natural sanctuary, and an interesting natural experiment.

Mr. Atkinson made some remarks on the sea voyages to St. Kilda in 1947, pointing out the weather was such that his boat could not be left unattended.

Gannet Colonies.

Mon. R. D. Etchécopar remarked that it has now been definitely established that Gannets breed on les Sept Îles, Brittany, and Mr. Fisher remarked that they had also been found breeding in 1947 on Rundø, off the coast of Norway.

White-spotted Bluethroats from Tangier.

Col. W. A. Payn exhibited three specimens of the White-spotted Bluethroat, *Luscinia svecica cyanecula* (Meisner), from Tangier, and made the following remarks :—

These three skins of the White-spotted Bluethroat were got by me at Tangier between 24 March and 5 April 1939. They include two adult males, and one that nearly corresponds to the illustration in the " Handbook " of the first winter male. A typical summer adult from Nice is also included for comparison.

It will be noted that the two adult males from Tangier have the throats quite blue, with little or no white spot visible, whereas the normal type from Nice has a large white spot. Only one specimen of the former is at present in the British Museum collection.

In an article by Mr. Witherby in 'The Ibis' for 1928 on the birds of Central Spain, he notes that he found large numbers of White-spotted Bluethroats breeding in one locality in the Sierra de Gredos, west of Madrid: of these only three were seen with the large white spot, the others being of the type now being exhibited from Tangier. He further remarks that in other parts of Europe it is the reverse, viz.: those with the large white spot are normal, the type with little or no white spot being rare.

Hence it is very probable that my Tangier birds were on their way to the locality mentioned by Mr. Witherby.

Col. Meinertzhagen in his article in 'The Ibis' for 1940, on birds of Morocco, notes that the White-spotted Bluethroat was quite common in fresh plumage, with moult complete, at the end of October in the Sous Valley, some 400 miles south of Tangier, and he considered that this was their winter resort.

Thus we have the whole gamut of the range of birds with this type of plumage for the year.

As regards the third specimen, which may be in first winter plumage, it seems curious that a bird should still be seen in winter plumage on the spring migration. Migrants are generally supposed to do their moult before the spring migration.

As the result of observing the spring migration at Tangier for five years, and in connection with the above, I am confirmed in a theory I have formed, that most of the small passerine migrants passing over the Straits of Gibraltar do not go beyond the south or middle of Spain for their summer quarters. My reasons for this are based on the following:—

1. Some of the small common migrants, *e.g.* Lesser Whitethroat, Wood Warbler, and perhaps the Wryneck, which pass freely on migration over the east and central parts of the Mediterranean, do not migrate over the Straits of Gibraltar. This is from my own experience, and is confirmed by Mr. Witherby.

2. Many passerine migrants, which do pass over the Straits of Gibraltar are local races, *e.g.*, House Martin, Cuckoo, Swift, Ashy-headed Wagtail, Pied Flycatcher, Redstart, Woodchat Shrike, Common Wheatear.

The reason of this is probably the series of mountain ranges, or sierras, running from east to west for it is well known that small birds on migration will cross broad seas, but are very loth to pass over high mountain ranges.

These remarks do not apply to the north of Spain ; for many migrants from North Africa probably arrive in North Spain via Algeria, Sicily, Sardinia, Corsica, and the Balearic Isles.

On the available names for the French race of Rock-Pipit.

Mr. P. A. Clancey sent the following note :—

Meinertzhagen, Bull. B. O. C. 67 (1947), p. 96, in discussing the French race of Rock-Pipit uses without comment the names *Anthus spinoletta immutabilis* Degland, 1849, and *Anthus spinoletta ponens* Clancey, 1942.

Degland, Ornith. Europ. 1 (1849), p. 429, introduced *Anthus immutabilis* for (*a*) winter visitors to Dieppe and (*b*) the breeding birds of Britanny. In Bull. B. O. C. 63 (1942), p. 41, I separated under the name *Anthus spinoletta ponens* the birds of Ushant, Finistère, from *Anthus spinoletta petrosus* (Montagu), 1798 : South Wales (*cf.* Meinertzhagen, *loc. cit.*) on account of the paler, less yellowish, coloration and the more nebulous nature of the striæ. It is evident that the breeding birds of Ushant and Britanny are of one race and that the use of two names is not tenable. In order to place the issue on a more satisfactory footing I here restrict the type-locality of *A. immutabilis* on Degland's first reference to Dieppe and retain *A. s. ponens* for the breeding populations of the coasts of Ushant and Britanny.

It is clear from the available data that no other course is open to us. *Anthus spinoletta littoralis* Brehm, 1831 : Danish Islands, is known to be of frequent occurrence in northern France and is almost certainly a winter visitor to the Dieppe region. Careful collecting in this same area would doubtless show that other races, including the indigenous French one, occur as winter visitors. It is obvious from Degland's second reference that *A. immutabilis* was based on specific rather than racial considerations, and I am of the opinion that it is racially indeterminate. The application of a name intended in the first place for winter visitors to a locality where it is not known to breed to breeding populations located two hundred miles or so further west, especially when no type-specimen is available, it not only misleading but entirely contrary to the accepted tenets of systematic procedure.

A. immutabilis is placed as a synonym of *A. s. petrosus* (=*A. s. obscura* (Latham), 1790) by Hartert, Vög. pal. Fauna, 1 (1905), p. 283. As there must always be a considerable measure of doubt in connection with the racial status of the name perhaps it is best left in the synonymy of *A. s. petrosus*, the earliest name for the true Rock-Pipits.

Notes on East African Birds.

Capt. C. H. B. Grant and Mr. C. W. Mackworth-Praed sent the three following notes :—

(1) On the status of *Pycnonotus tricolor vaughan-jonesi* White.

In the Bull. B. O. C. 66, 1946, p. 46, we expressed the opinion that this race should be attached to *Pycnonotus annectans* Roberts. Through the kindness of Mr. White we have seen some of the specimens and agree with him that this is a race of *Pycnonotus tricolor* (Hartlaub) and not of *P. annectans*.

(2) On *Anthoscopus caroli* (Sharpe) and *Anthoscopus roccatii* Salvadori.

In the Bull. B. O. C. 63, 1942, p. 45, we discussed the birds of this group and divided them into two species. The British Museum (Natural History) has received a further series including thirteen specimens from Dr. Winterbottom and we have re-examined the whole question and have now come to the conclusion that there is only one species. The colour difference of the upper parts—between *A. caroli* and *A. roccatii* is largely one of degree and no exact demarkation can be given, as there is a distinct gradation from the greyish, or buffy grey, of the upper parts of *A. caroli* through olivaceous to the green of *A. ansorgei* Hartert, and the same is true of the amount of buff on the underparts. Furthermore, there appears to be no overlap between the races. The races we recognise are as follows :—

Anthoscpous caroli caroli (Sharpe).

Ægithalus caroli Sharpe, Ibis, 1871, p. 415 : Ovaguenyama, Damaraland.

Above ashy grey very slightly washed with olivaceous, below chin to breast creamy white ; breast to under tail-coverts pale buff. Wing 53 to 55 mm. Three measured.

Distribution.—Damaraland.

Anthoscopus caroli sylviella Reichenow.

Anthoscopus sylviella Reichenow, O.M. 1904, p. 27 : Usafua, Rungwe district, south-western Tanganyika Territory.

Above slightly darker than *A. c. caroli* ; velow chin to under tail-coverts buff. Wing 52 to 58 mm. Five measured.

Distribution.—North-eastern Tanganyika Territory, east of Lake Natron through Iringa to south-western Tanganyika Territory.

Anthoscopus caroli ansorgei Hartert.

Anthoscopus ansorgei Hartert, Bull. B. O. C. 15, 1905, p. 74 : Mangonga River, Benguella, Angola.

Above green, below creamy white. Wing 54. One measured.

Distribution.—Belgian Congo at the Kasai district to Angola.

Anthoscopus caroli sharpei Hartert.

Anthoscopus sharpei Hartert, Bull. B. O. C. 15, 1905, p. 75 : Usambiro, Tabora district, central Tanganyika Territory.

Similar to *A. c. sylviella* but forehead tawny not pale buff. Wing 54 mm. One measured.

Distribution.—Kenya Colony from the Kikuyu area to Tanganyika Terrotiry west of Lake Natron and the Tabora district.

Anthoscopus caroli roccatii Salvadori.

Anthoscopus roccatii Salvadori, Bull. Mus. Torino, 21, No. 542, 1906, p. 2 : Entebbe, southern Uganda.

Above dull olive-green ; below dull yellow ; lower belly and under tail-coverts slightly buffy. Wing 52 to 56 mm. Nine measured.

Distribution.—Southern half of Uganda between Ruwenzori Mts., Mt. Elgon and Lake Victoria.

Anthoscopus caroli rothschildi Neumann.

Anthoscopus rothschildi Neumann, J. f. O. 1907, p. 597 : Simba, south-eastern Kenya Colony.

No specimens seen. Description compared to *A. sylviella* but given as paler ochre yellow below, and is therefore nearer to *A. c. sylviella* and *A. c. sharpei* than *A. c. taruensis.*

Distribution.—The higher country around the type locality and the Kitui area of Kenya Colony.

Anthoscopus caroli robertsi Haagner.

Anthoscopus robertsi Haagner, Ann. Trans. Mus. 1, 1909, p. 233 : Villa Pereira, Boror, Portuguese East Africa.

Above similar to *A. c. roccatii* but slightly greyer ; below pale yellow ; lower belly and under tail-coverts pale buff. Wing 51 to 58 mm. Thirty three measured.

Distribution.—Northern Rhodesia (except Lofu River), Nyasaland, southern Tanganyika Territory at Liwale, northern Portuguese East Africa and the Zambesi Valley.

Anthoscopus caroli hellmayri Roberts.

Anthoscopus caroli hellmayri Roberts, Ann. Trans. Mus. 4, 1914, p. 174 : Mapagone, north-eastern Transvaal.

Above rather less olivaceous and slightly more ashy than *A. c. robertsi*. Wing 51 to 56 mm. Eleven measured.

Distribution.—Eastern and southern Rhodesia to the eastern Transvaal, southern Portuguese East Africa, Natal and Zululand.

Anthoscopus caroli taruensis Van Someren.

Anthoscopus caroli taruensis Van Someren, Bull. B. O. C. 41, 1921, p. 112 : Samburu, south-eastern Kenya Colony.

Above and below similar to *A. c. robertsi*, but smaller. Wing 49 to 50 mm. Four measured.

Distribution.—The lower coastal area of Kenya Colony from the Tana River to Samburu and Chamgamwe and north-eastern Tanganyika Territory at Korogwe and Ngomeni.

Anthoscopus caroli rhodesiæ Sclater.

Anthoscopus ansorgei rhodesiæ W. L. Sclater, Bull. B. O. C. 52, 1932, p. 143 : Mt. Sunzu, about 12 miles east of Abercorn, Northern Rhodesia.

Above duller, more olivaceous green, than *A. c. ansorgei* ; belows imilar to *A. c. ansorgei* but lower belly and under tail-coverts faintly washed with buff. Wing 48 to 57 mm. Six measured.

Distribution.—The Ufipa Plateau south-western Tanganyika Territory to south end of Lake Tanganyika at the Lofu River, north-eastern Northern Rhodesia and 47 miles north-east of Elizabethville, Belgian Congo.

The two specimens from 47 miles north-east of Elizabethville are above duller and very close in colour to *A. c. robertsi*, but below they agree with *A. c. rhodesiæ*.

Anthoscopus caroli winterbottomi White.

Anthoscopus caroli winterbottomi White, Ibis, 1946, p. 101 : Mwinilimgu, north-western Northern Rhodesia.

Similar to *A. c. robertsi* but slightly greener above especially on head. Wing 54 to 57 mm. One measured.

Distribution.—North-western Northern Rhodesia.

Note.—*A. c. rhodesiæ* occurs at the Lofu River at the south end of Lake Tanganyika ; *A. c. robertsi* occurs 70 miles south of Fort Hill and Karonga at the north end of Lake Nyasa, at Liwale southern Tanganyika Territory about 210 miles from Iringa, and at Ndola about 130 miles from the most southerly known locality of *A. c. rhodesiæ*. *A. c. sylviella* occurs at Iringa about 220 miles from Fort Hill, about 210 miles from Liwale and about 260 miles from the Ufipa Plateau. These three races do not so far have an overlap and being quite distinct one from the other cannot easily be confused.

(3) On the status of *Fringillaria striolata jebelmarræ* Lynes, Bull. B. O. C. 41, 1920, p. 34 : Jebel Marra, Darfur, western Sudan, and *Fringillaria striolata dankali* Thesiger & Meynell, Bull. B. O. C. 55, 1934, p. 79 : Adau, Danakil, eastern Abyssinia.

We have examined and compared both these types with the British Museum series and find that the characters given do not hold good geographically. We therefore place *Fringillaria striolata jebelmarræ* Lynes, as a synonym of *Fringillaria striolata saturatior* Sharpe, and *Fringillaria striolata dankali* Thesiger & Meynell as a synonym of *Fringillaria striolata striolata* (Lichtenstein).

Notice.

The next Meeting of the Club will take place on 21 January, 1948, at the Rembrandt Hotel, Thurloe Place, S.W. 7. Dinner at 6.30 P.M.

BULLETIN

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The four-hundred-and-seventy-third Meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, S.W.7, on Wednesday, 21 January, 1948, with dinner at 6.30 P.M.

Chairman : Dr. J. M. HARRISON.

Members present : Miss C. M. ACLAND ; R. C. R. ALLEN ; Miss P. BARCLAY-SMITH ; F. J. F. BARRINGTON ; Mrs. G. M. CHADWYCK-HEALEY ; J. CUNNINGHAM ; J. FISHER ; W. E. GLEGG (*Hon. Sec.*) ; Miss C. E. GODMAN ; Miss E. M. GODMAN (*Vice-Chairman*) ; Capt. C. H. B. GRANT (*Editor*) ; Dr. J. G. HARRISON ; N. B. KINNEAR ; Miss E. P. LEACH (*Hon. Treasurer*) ; Dr. G. CARMICHAEL LOW ; C. W. MACKWORTH-PRAED ; Sir P. MANSON-BAHR ; G. M. MATHEWS ; E. S. MAY ; E. R. PARRINDER ; Lt.-Col. W. A. PAYN ; K. PIERCY ; Major G. H. R. PYE-SMITH ; Miss G. M. RHODES ; D. SETH-SMITH ; Col. R. SPARROW ; Lt.-Commdr. C. P. STAPLES ; C. N. WALTER ; A. WILLIAMS ; C. DE WORMS ; Col. O. E. WYNNE.

Guests :—Major W. M. CONGREVE ; R. M. CRASKE ; Mrs. D. DERSCHEID ; Miss L. P. GRANT ; Dr. E. HINDLE ; Miss E. KINNEAR ; Mrs. E. MACKWORTH-PRAED ; D. C. H. MCLEAN ; Dr. W. A. RICHARDS ; Mrs. D. B. SPARROW ; Mrs. L. L. STAPLES.

Members, 32 ; Guests, 11 ; Total, 43.

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Further as to Colour Change without a Moult.

Lieut.-Commander C. P. STAPLES remarked :—

In the discussion at the November Meeting, following Dr. Jeffrey Harrison's demonstration of apparent colour change in Waders' feathers without a moult, I referred to the colour feeding of Canaries and to the induced melanism in a Bullfinch consequent on a diet of hemp seed. I stated that Canaries are only colour fed at the moult but made no specific limitation in the case of the Bullfinch. With his customary acumen, Mr. Tucker realized the implication and suggested I should make further enquiries. As the question of colour change in birds has always interested me, and I had already certain views on the subject, I decided to investigate the problem further with particular reference to cage and aviary birds where there is no question that it is the same individual that is being observed at all times.

I must express my indebtedness to Mr. Allen Silver for his assistance and kindness in dealing with my questions and meeting me at the recent National and Crystal Palace Cage Birds Shows, where he introduced me to other expert aviculturists. Mr. Silver is a life-long aviculturist, a much sought after Judge at shows, a member of the Union, and one whose expressions of opinion are not lightly made or unworthy of the most careful consideration. His statements are authoritative. Unfortunately he has had no personal experience of melanism in the Bullfinch to which I will refer later, but he is extremely interested in the colour change which occurs in the crimson of the face and throat of the Goldfinch, known among fanciers as " the coming-up of the blaze ". I am assured by Mr. Silver and others that this does not arise from partial moult or abrasion. No red feathers are cast between moults and there are no light tips to the feathers. I examined some forty specimens at the National Show in December, from which Mr. Silver could pick out those that were backward and those that were forward in colour. The backward individuals exhibited a peculiar " brassiness " in the red compared with the deeper colouring of the forward specimens. Everyone confirmed that this coming into colour is progressive in all individuals and is accepted as a matter of course. I had another look at the Goldfinches at the Crystal Palace Show last week and can assure you that the variation between the lightest and the darkest specimens was not then so marked as it was at the other Show six weeks previously, in other words, the backward individuals were catching up on the forward ones.

Another progressive and very noticeable change occurs in the case of the Yellow Bunting. The colours become richer particularly on the

rump which is much brighter at the breeding season. As this is the one part of the bird which is not claimed to abrade, and is the part of a bird's plumage least likely to bleach from the effects of sunlight, we must accept this as a colour change which is progressive and actual.

These are two specific examples of the generally accepted proposition that all birds improve in colour and in the lustre and sheen of their plumage at the breeding season which is generally stated to be due to overall abrasion and cleaning up of the feather tips. Quite frankly this is discounted as the proximate cause by bird fanciers, and I certainly do not agree myself that it is the all embracing solution to the problem.

Another apparent change in colour or colour tone in caged birds arises from a diet of privet berries and is said to be specially efficacious in the case of the Bullfinch. The following is a quotation from a well-known authority on wild foods for birds :—

> " Privet berries seem to have won their greatest fame as a food for the Bullfinch and it is very doubtful if there is any other colouring agent that works so safely and surely as these. The plumage of the breast develops a deeper and richer tone, and the blacks and greys are immensely improved in pigment and polish, particularly in the case of cage moulted birds ".

He then goes on to state that privet berries also produce a marked improvement in Greenfinches, Chaffinches, Hawfinches, Thrushes, Robins and Blackcaps.

Privet berries are not ripe and edible until October, that is to say, after the birds have moulted. How then can there be any change in colour, if, as is claimed by the no-change school, all feathers are sealed off and incapable of receiving anything from the body after the moult ? Bird fanciers do not buy privet berries from dealers for amusement. Actually the privet berry is rich in oil and any change in colour tone would arise from oil absorption and not pigmentation. The pigment in privet berry is one of the blue anthocyanins. This improvement in colour through oil in the feathers is well known. It is an old observation that the intensity of the red colour in the Flamingo depends upon the amount of oil contained in the feathers. It is also claimed, in this bird, that the rosy colour results from a crustacean diet, which beside being oily would also provide red and yellow lipochrome pigments.

One very successful exhibitor of British Birds assured me that he habitually colour feeds his birds with halibut liver oil, and in his opinion, " stop-cocking " of the bases of the feathers is incomplete where oil is liberally taken, and that oil absorption continues after the moult. I was particularly impressed by the fine colouring and sheen of a Cock

Yellow Wagtail which he exhibited and claimed was then (6 December), more brightly coloured than when fresh moulted, and had progressively improved since being exhibited at another show in October. I saw that bird again last week when it was a prize winner. Examination disclosed that the oily lustre was confined to the body contour feathers—the wing and tail quills were entirely unaffected. This is an important point. A similar effect arises with the colour fed Canary—the body contour feathers become orange, while the quills remain pale yellow. Modern colour feeding is effected by using tasteless pepper obtained from the seed pods of the Red Pepper (*Capsicum annuum*), which contain the plant pigments lycopene and capsanthin, both of which are lipochromes or fat pigments. As such they only affect feathers attached to the fat parts of birds. Oil has a similar effect.

Now we come to the induced melanism in the Bullfinch through a concentrated diet of hemp seed. Here again oil is the deciding factor, for it is only hemp seed having a high content which affects the bird. Home grown hemp which is deficient in oil and which is the only kind now available has no bad effect on plumage. The seed, which was previous to the War, imported from S.E. Europe, and which had a 35 per cent. oil content, was the type which blackened the Bullfinch. In fact, no melanistic Bullfinches have been exhibited since just before the outbreak of war and some of these were said to be of the European race. Hence I could only obtain general hearsay evidence and could not establish whether the change only occurred at the moult. I have just heard, however, from one fancier that his bird had progressively darkened after the moult, and he confirms that the red of the breast and the grey of the mantle were both darkened. I have quite expected to hear that the darkening is progressive having regard to what I assume to be the chemical nature of the change.

Hemp oil is greenish-yellow, and when crude, darkens slightly in the atmosphere due, no doubt, to melanin formation analogous to the darkening of a cut apple or potato. The mechanic of these changes provide a possible clue not only to the darkening of the Bullfinch but also to the deepening in melanin markings of birds at the breeding season, which changes are limited to the body contour feathers.

Melanin as a pigment is claimed to arise from the blood stream and to be akin to the hormone adrenalin. As there is no constitutional weakness in a melanistic Bullfinch one must assume that inhibited adrenalin secretion is not the cause of its darkening on a concentrated diet of hemp. One must look for some common denominators that would cause the change, particularly as other birds, with the exception of the

Red Cardinal, are unaffected in colour by hemp seed. The composition of hemp seed and its protein edestin seem to supply an answer in conjunction with the general habits of the Bullfinch.

The animo-acid tyrosine is present in hemp seed in association with some other free animo-acids of close relationship. The commonest way in which melanin is formed is by the oxidation of tyrosine in the atmosphere through the catalyzing action of the enzyme tyrosinase. Now tyrosine itself is present in all epidermal structures, hence it is already present in the feathers of the bird, while tyrosinase is present in fat. Both tyrosine and tyrosinase are colourless and the latter acts as the oxidase of the former, and when the two are mixed together in the atmosphere, the tyrosine first changes to rose or garnet-red, then reddish-brown, then brown, dark brown, and finally blackish brown or black, which is melanin in its final form. Hence we have the two essential substances for the formation of melanin chemically already present in the bird, and all we require is a state of disequilibrium to set up chemical action. The Bullfinch is naturally inactive and greedy in captivity, and tends to gross obesity on a diet of oily hemp seed, so there is an excessive secretion from the fatty parts which results, I suggest, in an overspill of the two substances which form melanin by catalysis. The Goldfinch and the Linnet, both avid hemp seed eaters, are not affected adversely because they are naturally active and never run to fat.

As a matter of fact, hemp seed is claimed to be the finest food for the Goldfinch, and the best coloured specimens are almost invariably fed on hemp. Like the Bullfinch, the Red Cardinal in captivity is rather inactive and tends to get fat on hemp and has been known to darken in consequence.

If I am correct in assuming that the darkening of the Bullfinch results from melanin created by the oxidation of tyrosine then there seems no reason why deposits of melanin in its intermediate colour stages in the feathers of other birds should not be similarly darkened by internal secretions from the fatty parts. Previously colourless areas where tyrosine is already present could also exhibit visible and progressively darkening markings. This would explain the coming into colour of the feathers shown by Dr. Jeffrey Harrison and also account for the deepening and clarification of the markings on the backs of Redpolls, Siskins, Twites and Linnets in Spring, which changes are observed in caged specimens and would not all appear to be due to abrasion as many are in the centres of the feathers. Abrasion has up to the present been a convenient but doubtful explanation of these changes, slight though they may be.

In his 'Heligoland as an Ornithological Observatory', published in 1895, Gätke distinguished between colour changes which are associated with changes in feather structure and those in which they are not so associated. He cited the abrasive changes in Linnets and Redpolls as changes in feather structure but also claimed that the changes in the colour of Guillemots and Little Auks are due to an increase in the amount of pigment in the feather without textual change. He enumerates many other instances of colour change produced by an increased amount of pigment or by re-arrangement of pigment as when black and brownish black replace white or grey, or when black and white replace grey. Was he also referring to an increase of melanin by oxidation? As the chemical natures of tyrosine, tyrosinase and other enzymes, and in fact of melanin itself are quite modern discoveries, I submit that the whole question of colour change in contour feathers should be re-opened in the light of modern knowledge of these substances and the great advances which have been made in the bio-chemistry of plants and plant pigments. These, after all, must affect birds since plants form the basis of all bird foods.

From this point I am going, as it were, to think aloud.

I have referred to some colour changes which occur without a moult, I have shown that oil in food, whether natural or artificial, affects a birds' plumage, and I have suggested the mechanics of melanism in a Bullfinch. In all cases you will have noticed that no change is claimed in the flight or tail feathers, the only changes are in the body contour feathers which are claimed to be still capable of receiving secretions from the fat of the bird.

It would be illogical to suggest that quill feathers are not completely sealed off after the moult. Their essential purpose is flight, for which they must remain rigid, unsoftened by body secretions of oil or fat. For this reason, too, lipochrome pigments in quills are the exception for feathers containing lipochrome pigments normally undergo structural modification in that the barbules of the apical barbs become suppressed and the feather tips are, in consequence, soft and do not cohere. To have such a modification in any part of a quill would prove disastrous from the point of view of flight except in those few instances, such as the tail of the Lavender Finch (*Lagonosticta cærulescens*) of Senegambia, where the whole feather appears to be lipochrome pigmented and does not become modified for this reason. But what of the general body contour feathers? They serve a different purpose from the quills, they carry the sexual and bright and lipochrome colours, their general configuration and form is different and they are attached to fat and not to bone. Is it

necessary that they should be completely sealed off from receiving internal secretions ? I think not, and from the examples I have given, doubt that they are completely " stop-cocked ". I am apparently not alone in this conclusion.

I do not suggest that any elaborate change can take place in body contour feathers without a moult. It would be foolish to suppose that a bird could heavily re-pigment its feathers at the same time as it is undergoing the functional changes and strains incident to the breeding cycle. There also appear to be solid grounds for excluding the deposition of pigment in a grown feather on mechanical reasons alone. Pigment as such does not appear to be free flowing. I do, however, suggest that there are good grounds for believing that deepening and enhancing of colours does occur and that previously blank areas can subsequently exhibit melanin coloration and markings and that all these slight changes occur through fatty secretions. They all appear to occur as the bird is coming into breeding condition and may well be linked with the hormonic secretions then occurring. Whether they can in any way be correlated to the changes in the colour of bills as in the cases of House Sparrows, Chaffinches, Hawfinches and Starlings, would be an interesting investigation—these changes of course are due to internal secretions.

What about abrasive moult ? I do not think I am alone in feeling that abrasive moult in the sense of a wearing away of the feather tips by outside agency is a haphazard, happy-go-lucky conception. It is fortuitous in action yet exact in fulfilment. No matter where a bird lives, whether wild or caged, no matter when it moults, late or early, each seems to acquire nuptial plumage by abrasion at the psychological moment. It seems a wasteful proposition that an otherwise vigorous male should depend for compatible mating on the effect that outside factors may have had on its plumage.

On the other hand, I suggest that some fatty secretion permeating a feather would tend to accelerate the dropping off of worn and unwanted tips and would time their shedding to the sexual maturity of the bird (a sort of desquamation process). There are some aspects of sexual abrasive moult among cage birds that appear to support this suggestion. In Linnets, Redpolls and Twites, for instance, the secondary sexual characters of red flushes on breast or rump respectively, are never moulted out in captivity into their proper tone. They invariably remain bronze or old gold and substantially the same colour as that usually laid down in the wild bird after the autumnal moult. The coming up into colour under cover of the brown tips which I claim undoubtedly occurs with wild specimens is not repeated in captivity. Among wild Linnets, only

the finest songsters and best marked birds exhibit the bright red breast. The old-time bird catchers could pick out those males which would moult out bright red; those that would show little red they called "stone-breasted" and discarded these as being useless both as songsters or for muling purposes.

The difference between the abrasive moult in the wild and caged specimens is sometimes claimed as due to incorrect feeding, but there is no valid reason for this assertion. I suggest it may be due to the absence of promiscuous males with which, were it wild, the captive male would have to contend by coloration and song. The sexual excitement which would incite secretion or vice versa is thus inhibited and the secondary sexual characters become suppressed.

In the same way captive cock Snow Buntings never attain the black mantle of the wild individuals. There always remain chestnut or buffish feather edges. The abrasive moult of this species is intriguing and descriptions of it are conflicting. In his 'Manual of British Birds', Howard Saunders says, "In autumn the bird . . . has the feathers of the upper parts broadly edged with dull chestnut . . . In winter the chestnut margins gradually become white". This implies a change of colour. The Handbook is not so explicit. It refers to the two types as variants. Yet the series of skins in the British Museum definitely show that white edged birds are not taken before December—earlier birds have chestnut edges and tips to the mantle feathers. Furthermore, these white-edged birds have this edging noticeably narrower than the chestnut edging of the others. This suggests there has been some wearing away coupled with a colour change. What is even more confusing is the statement in the Handbook that the males abrade tips and edges of the feathers, whereas the females abrade the tips only. This statement just does not make sense. It is evasive. It certainly appears that in the male the chestnut or white edges still remaining after partial abrasion have turned black. I cannot conceive of one sex abrading feathers of the same size and shape much more extensively than the other. I compared the area of black in the feathers of the series of chestnut edged birds with the area of black remaining after full male plumage was attained in the black specimens and found a noticeable enlargement. The change is so remarkable, particularly when comparing the two sexes, that it should be looked into again.

If I am right in claiming that some internal secretion reaches the feathers after the moult, one would expect to find some fading or change in feathers of skins in course of time, and that such changes would only be apparent in the body contour feathers, not the quills, through drying

out. In their recent article in 'British Birds' (November 1947), Messrs. Wagstaffe and Williamson of the Yorkshire Museum, set out a list of changes which they admit is not exhaustive, but in no instance do they refer specifically to any change in the quills of wings or tail. Changes in the body contour feathers are common. It is also interesting to notice that the "foxing" which occurs on the backs of Redwings, Robins and Song Thrushes, which is a change from olive brown to rusty brown, is strictly in accordance with the reverse order in which melanin coloration is attained when tyrosine is oxidized, that is to say, any fading would be from brown to reddish brown and not from one shade of brown to a lighter shade.

We know that all feathers have a considerable oil content.

Another point which may or may not be of importance is the use by land birds of the preen gland. Water birds having a more developed gland may be different. Is it not a fact that a bird normally resorts to this gland for dressing the quills and not the body contour feathers? Is it not also a fact that the gland is absent in the case of the flightless birds? Why is this so? Does it show that the body contour feathers receive a quota of oil from the body, whereas the quills require external dressing?

Any claim that there can be a change of colour without a moult has always been met by the assertion that it is either an individual aberration resulting from an incomplete moult or cannot possibly occur anyway, because no one can find a channel of entry into a cornified feather. Surely, to say that something cannot happen because one does not know how it happens is manifestly absurd. In any event, no one really supposes that there would be a channel left open through which a feather shaft could be flooded by fluid to the detriment of its essential purpose that it should be light and rigid. We do not require a microscope to see parchment permeated by oil or fat. Parchment is a dermal product and enzymes can oxidize their substrates through the finest parchment, and then when only in the proportion of one part to 200,000. Cannot the cortex of a feather similarly be a vehicle for the permeation of an oily secretion. One does not expect pigments as such to pass up a feather. Melanin cannot, because a feather when grown is cut off from the blood stream for obvious reasons, and lipochromes cannot because they only pigment a feather through being themselves dissolved in fat as fat and not as a secretion from fat. But if a fatty secretion of fat were to permeate a feather it would automatically deepen its colours and could, according to its nature, chemically change colours of a deposited pigment.

I may be looked upon as a heretic or a lunatic in claiming that you can have a limited colour change in body contour feathers without a

moult as the result of a fatty secretion into the feathers. Such a secretion may also change the colour of visible melanin deposits or even bring into view potential melanin colouring through the oxidation of tyrosine. It would also deepen lipochrome pigmentation and effect a considerable improvement in the appearance of prismatic or optical colours by deepening the tone of the underlying base. Abrasive moult, as a means of bringing a bird into colour, would be hastened as and when required, and where abrasive moult is the means of disclosing secondary sexual characters the resulting colours are gradually built up under the cover of the feather tips by secretion.

Obviously one cannot prove colour change save by studying individuals under controlled conditions and, since none of us can faithfully remember shades of colour, record changes by photography. I have, therefore, acquired aviary bred pairs of Snow Buntings, Bullfinches, Redpolls, Yellow Buntings and Siskins which I propose to photograph in colour and monochrome at regular intervals. If any member can suggest other birds that might assist by showing change or any other method of obtaining permanent records I shall be grateful.

Whilst I appreciate that it is comparatively simple to pick out certain occurrences and formulate a thesis around them, and that time and experiments may subsequently prove my somewhat revolutionary proposition to be fallacious, I do feel that I have enumerated sufficient actual changes in birds without a moult to shake the confidence of the "no change" school. To have one school of thought which adopts an autocratic and negative attitude is neither beneficial not conducive to progress in any form of investigation.

Dr. J. M. Harrison, Dr. J. G. Harrison, Mr. James Fisher and Sir Philip Manson-bahr took part in the discussion following this paper.

Lieut.-Commander Staples also referred to the different periods at which birds of substantially the same nature and inhabiting the same areas tended to acquire breeding plumage and was unable to reconcile these differences with abrasion solely brought about by outside influencies. In his experience the Great Tit was cleaned up before the Blue Tit and commences its spring song earlier; the Linnet is in full plumage and song before the Yellow Bunting, who breeds later, and was inclined to think the Hawfinch was in full colour before the Bullfinch, yet each of the pair of birds mentioned enjoys equal opportunities of abrasion as their habitats are similar. In these circumstances he was of the opinion that abrasion was something more than a mere mechanical wearing away of feather tips.

Exhibition of Chaffinches including an example of Fringilla coelebs hortensis Brehm from Kent.

Dr. J. M. Harrison remarked :—

I am exhibiting tonight six Chaffinches. The top row shows, on the left, a breeding Swedish topotype, *F. c. cœlebs* Linnæus, from Upsala, in the centre, a breeding English bird, *F. c. gengleri* Kleinschmidt, and on the right, an example of *F. c. hortensis* Brehm, obtained on 10 March 1945, near Seal. I would like to stress that this race is a commonly occurring one in Kent during the winter, but more particularly during the early spring, in the large migratory flocks which one meets with during March and early April.

It will be seen at once how very distinct these three races are, the pale cinnamon, almost yellow, English bird, the red-pink Swedish and the violaceous Central European form.

Three of the birds shown are breeding examples of *F. c. hortensis*, German topotypes. The range of this latter race would appear to be Germany, France, Holland, Belgium and Switzerland, and there is, in my opinion, little doubt that it is this race, rather than *F. c. cœlebs*, which forms the bulk of the large migratory flocks above referred to. At the same time I have identified a number of examples of the latter race from Kent, from mixed flocks of Finches and Bramblings.

A new Race of the Black-throated Babbler.

Mr. S. Dillon Ripley sent the following :—

In the course of examining a collection of birds made last winter in the Mishmi Hills of north-east Assam, I have had occasion to compare a large series of *Stachyris nigriceps* Blyth, from Nepal east to Burma. The typical race occurs from Nepal east and north of the Brahmaputra River to the Miri Hills. This race is characterized by having the throat blackish-grey, the feathers edged with white. The ear-coverts in this race tend to be dark, verging towards seal brown. *S. n. coltarti* Harington, (type locality, Margherita) from Margherita, the Naga Hills, north Burma (upper Chindwin) and south at least to Bhamo, is characterized by having a blackish-grey throat with little or no white edging to the feathers, and by having rufous-brown ear-coverts. Birds from Cachar and the Chin Hills (Mt. Victoria) do not fit either race and, therefore, I propose :

Stachyris nigriceps spadix, subsp. nov.

Description.—Differs from *S. nigriceps* by having a dark blackish-grey unstreaked throat, and by having the ear-coverts lighter in colour, brown,

approaching burnt umber. From *S. u. coltarti* this race differs by having the ear-coverts brown rather than rufous-brown. From *S. u. davisoni* Sharpe, of east and Peninsula Burma and the northern Malay Peninsula, this race differs by having a somewhat darker throat and darker brown, not ochraceous ear-coverts. Also the upper parts are more olive brown, less tinged with rufous.

Distribution.—Assam south of the Brahmaputra, excluding north Lakhimpur—the Naga Hills and the Chin Hills.

Type.—Female adult in the Amer. Mus. Nat. Hist., Laisung, north Cachar, Assam, 6 April 1895, collected by E. C. Stuart Baker, Amer. Mus. Nat. Hist. No. 589672.

Remarks.—Birds from the Mishmi Hills appear intermediate in character between *S. nigriceps* and *S. spadix*. These birds lack the whitish edging to the throat feathers of the typical race but have darker more blackish ear-coverts than *S. spadix*.

Ticehurst, 'Ibis', 1939, p. 564, remarks that *S. u. davisoni* differs from *S. nigriceps* only in that the ear-coverts are ochraceous, whereas in the latter they are blackish. He feels that the character of having more rufous upper parts is only a juvenile character. However, specimens of *S. u. davisoni* from the collections in New York and Washington do appear more rufous on the upper parts and I am inclined to think that it is not a purely juvenile character or one due to foxing.

My thanks are due to the authorities of the American Museum of Natural History for allowing me to describe specimens from their collections.

A new Race of the Woodchat-Shrike (Lanius senator Linnæus) from the Island of Sicily.

Mr. P. A. Clancey sent the following description :—

As the result of the investigations of the German systematist, Dr. O. Kleinschmidt, the number of described races of *Lanius senator* Linnæus was more than doubled during the period 1907–1922. Some of these races have been adversely criticized by Hartert, Steinbacher, Olivier, *et al.* In order to resolve matters I have recently reviewed the claims of the various races with all available material in this country and with the assistance of Dr. A. von Jordans, Museum Alexander Koenig, Bonn, and a revision of the Group is in course of preparation. In the meantime it is considered necessary to draw attention to the distinctive Sicilian

L. senator, which appears to differ substantially from other described races, and for it I propose the name :—

LANIUS SENATOR HENSII, new race.

Description.—Differs in having the under-parts strongly washed with reddish brown as opposed to yellowish sandy in all other races. Bill almost as massive as in *L. s. badius* but less hooked. Size as in *L. s. senator*.

Distribution.—Confined as a breeding bird to the island of Sicily. Winter quarters in tropical Africa not known.

Type.—In my collection. Female adult. Near Siracusa (Syracuse), Sicily, 1 August 1943. In moult.

Measurements of the type.—Wing (worn) 100, culmen from base 19, bill depth at nostrils 7·5, bill width at nostrils 6·5, tarsus 25, tail (worn) 77, speculum (exposed) 11 mm.

Remarks.—Material examined : *L. s. hensii*, 5. *Lanius senator senator* Linnæus, 1758 : Rhine Provinces, 19. *Lanius senator niloticus* (Bonaparte), 1853 : White Nile, 23. *Lanius senator badius* Hartlaub, 1854 : Gold Coast, 9. *Lanius senator flückigeri* Kleinschmidt, 1907 : Lambèse, Algeria, 2. *Lanius senator weigoldi* Kleinschmidt, 1918 : Malaga, Spain, 19. *Lanius senator erlangeri* Kleinschmidt, 1918 : Tunis, Tunisia, not examined—see below. *Lanius senator italiæ* Kleinschmidt, 1922 : Tuscany, Italy, 4. Dr. A. von Jordans has compared two adults of the new form with very extensive series of the above races as well as with the types of *L. s. flückigeri*, *L. s. weigoldi*, *L. s. erlangeri*, and *L. s. italiæ*, all in the collection of the Museum Alexander Koenig, Bonn.

Named in honour of our colleague, Dr. P. A. Hens, Netherlands, in recognition of his valuable contributions to our knowledge of western Palæarctic birds.

The specimens upon which the new race is founded were collected on the eastern side of the island of Sicily during the military campaign of 1943. The very faded and worn examples taken still show the characteristic reddish brown suffusions to the undersides. This is unusual in the species because by similar date birds of other races are generally pure white beneath. The specimens in partial fresh dress show that the full autumn plumage of the new race is most distinctive. Sicily seems to be an island of dark bird races and several novelties are known and await investigation.

Dr. A. von Jordans after comparing two specimens of *L. s. hensii* with material in the Museum Alexander Koenig, Bonn, writes (21 December

1947): "Your two adults from Sicily are strongly coloured on the undersides—there are similar ones among the north African specimens in fresh plumage, and though your's still wear the much faded and worn dress of the early part of the year, they would be ever so much more strongly coloured in fresh plumage. The tone is clearly quite different—reddish brown against the yellow-sandy colour of all others. At the same time of the year as these Sicilian birds, all our collected *weigoldi*, *badius*, etc., are almost pure white below, very few showing any trace of colour. The colour difference is throughout uniform and striking."

L. s. erlangeri, based on a single specimen from Tunis (Type, Kat. No. 2264, in Kleinschmidt's first collection, now in Mus. A. Koenig, Bonn), cannot be separated from *L. s. flückigeri*. *L. s. weigoldi* and *L. s. italiæ* are both valid races. Full details of these will be given in my revision of the Group.

For the loan of comparative materials and assistance I am deeply indebted to Dr. J. M. Harrison, Dr. A. von Jordans, Dr. O. Kleinschmidt, Mr. J. D. Macdonald, Col. R. Meinertzhagen and Lieut.-Col. W. A. Payn.

On the validity of Pyrrhula pyrrhula wardlawi Clancey.

Mr. P. A. Clancey sent the following communication :—

Pyrrhula pyrrhula wardlawi Clancey, 1947 : Kinloch Rannoch, Perthshire, Scotland, was separated (*vide* Bull. B. O. C. 67 (1947), p. 76) on account of the darker and bluer mantle coloration of the male, colder tone of mantle and warmer, less purple-brown, under-parts of the female and the average smaller bill in both sexes when compared with *Pyrrhula pyrrhula nesa* Mathews and Iredale, 1917 : Tring, Hertfordshire, England, and *Pyrrhula pyrrhula coccinea* (Gmelin), 1789 : Karlsruhe, Baden, western Germany. Meinertzhagen, Bull. B. O. C. 68 (1947), pp. 23–24, has criticized the race on a smaller series than that used for the original description.

In my revision of the British *Pyrrhula pyrrhula* (Linnæus) races in 'Ibis', 1948, pp. 132–134, I state that I had examined up to that time (May 1947) forty specimens. In view of Meinertzhagen's criticisms, I have reviewed the race again with the paratypical series and additional topotypical material collected personally in the type-locality in June 1947, and at my behest in the autumn of the same year.

Compared with *P. p. nesa* the dark bluish grey mantle coloration of the males of *P. p. wardlawi* is most striking. On the under-parts

I can detect no subtle differences but Scottish birds are perhaps on the whole a rather duller shade of pink. Females of *P. p. wardlawi*, in addition to prominent grey napes, exhibit a colder grey tone to the mantles which is most significant when viewed in series, *P. p. nesa* being quite brownish in comparison. On the under-parts *P. p. wardlawi* is rather warmer and never seems to have the greyish suffusion which is general in about 50 per cent of topotypical *P. p. nesa*. I agree with Meinertzhagen that there is a substantial overlap in bill measurements with the southern race, but the details enumerated in the original description do not belie the true facts of the case. I have in my collection two males from Essex which have bills comparable with many *P. p. wardlawi*. About eight out of the fifty *P. p. wardlawi* examined have bills approaching the majority of *P. p. nesa* in size and shape, but some of these have only " massive " bills by virtue of the fact that the upper and lower mandibles are out of alignment as a result of faulty preparatory technique. Certainly the overlap in bill measurements does not violate the principles of the 75 per cent convention and the criterion is of sufficient constancy and significance to justify the recognition of the Scottish montanic form of *P. pyrrhula* as a distinctive geographical race. The colour characters, in some respects ancillary to the structural modification, are of a sufficiently salient nature as to warrant the closest scrutiny in any critical estimation of the validity of *P. p. wardlawi*.

The Scottish specimens in the Meinertzhagen collection are faded, especially the males, and it was on this very material and the series in the Royal Scottish Museum that I based the statement " Comparison between races of this species must always be carried out with freshly taken series owing to the rapid fading which clearly takes place in museum skins " (Bull. B. O. C. 67 (1947), p. 77). Attention is drawn to the confirmatory evidence that *P. pyrrhula* fades rapidly in museum collections which is contained in the paper by Messrs. R. Wagstaffe and K. Williamson, ' British Birds ' 40 (1947), pp. 322–325. Such faded material clearly presents a serious danger which can beguile the ablest investigators, and it is obvious that Meinertzhagen did not appreciate the cogency of my remarks when writing his criticism. This view is further strengthened by his references to the skins in the Harrison collection which I have examined in great detail. The bulk of Dr. J. M. Harrison's series is of recent formation and, though it would not be correct to claim that all the skins are free from the effects of atmospheric pollution, the majority are in the main clean and agree perfectly well with new material in my collection from many other parts of southern and south-eastern England.

The types and paratypical series of races when readily available, as was so in the case of *P. p. wardlawi*, should always be consulted in any revision or critical appreciation. Such procedure would undoubtedly save irksome and repetitive enunciation of criteria already fully dealt with in the original diagnoses and an untoward extension of apposite literature.

P. p. wardlawi inhabits a less varied biotope than the southern *P. p. nesa*, being in many respects a coniferous woodland bird. In certain parts of the highlands of Scotland it can truly be regarded as common. The Scottish race appears to be a late breeder as birds taken up to and including 14 June exhibited only moderate gonad activity.

On the British races of Ægithalos caudatus (Linnæus).

Mr. P. A. Clancey sent the following communication :—

Meinertzhagen, Bull. B. O. C. 68 (1947), p. 27, discussed the characters claimed for the race *Ægithalos caudatus chlamyrhodomelanos* Clancey, 1941 : Evelix, near Dornoch, Sutherlandshire, N. Scotland (*vide* ' Ibis ', 1941, p. 314), separated on account of the narrower white fringes to the innermost secondaries and less white on the inner greater-coverts and the darker tone of the flanks when compared with *Ægithalos caudatus rosaceus* Mathews, 1938 : Selborne, Hampshire, England. In view of Meinertzhagen's findings I have re-examined the entire question of the validity of *Æ. c. chlamyrhodomelanos* with large materials from all parts of the British Isles.

The main characters upon which *Æ. c. chlamyrhodomelanos* was based are by no means constant and I must now admit error in placing too much reliance on the small amount of white on the secondaries and greater coverts in the three skins of northern Scottish birds available to me when I separated the race in 1941. Many birds from England and southern Scotland agree with the northern ones in this respect. The dark tone of the flanks is, however, a very different proposition, and in series *Æ. c. chlamyrhodomelanos* is readily separable. The flanks of the northern Scottish race are decidedly reddish and without the violaceous tinge found in the southern *Æ. c. rosaceus*. I now find that on the upper-parts the northern Scottish race is more intensely coloured, especially on the scapulars, and the black of the back is more glossy. In series the differences are perfectly visible—even to the uninitiated—and by no means so insignificant or inconstant as stated by Meinertzhagen.

The criteria just outlined are readily discernible in fresh autumn dress, but abrasion results in a toning down which does not permit differentiation between the northern and southern races on breeding birds.

(Fraser Darling, 'Nat. Hist. Highlands and Islands', 1947, p. 136, claims to have observed white-headed birds in the north-western Highlands. There is no evidence whatever in existing series to justify the view that white-headed examples occur in the indigenous race of that region (*Æ. c. chlamyrhodomelanos*), but further sample collections will clearly be needed before this point can be finally settled. Such observations unless backed by specimens and evidence of breeding are virtually valueless, and their perpetuation in the literature as valid records should be rigorously opposed).

I have yet to see a specimen from south of the Grampian mountains with the reddish flank coloration of *Æ. c. chlamyrhodomelanos*, which race inhabits a distinct geographical niche in the species, British distribution being strictly confined to the mountainous region of northern, western and central Scotland, as well as some Inner Hebrides. South of the mountains *Æ. c. rosaceus* is found. I therefore recognize *Æ. c. chlamyrhodomelanos* as a valid race, recognizable on account of the corrected characters defined above as well as on geographical grounds.

I have already indicated in 'Ibis', 1943, p. 90, that some birds from south-eastern England are inseparable from *Ægithalos caudatus europæus* (Hermann), 1804 : Switzerland. This now links up well with Meinertzhagen's findings *loc. cit.* of specimens from Holland, Belgium and France, which agree with *Æ. c. rosaceus*. The name *Ægithalos caudatus expugnatus* Bacmeister and Kleinschmidt, 1916 : north-eastern France, was presumably applied to intermediate populations of questionable stability, but I am unable to pass impartial comment on it at the present time.

The indigenous *Æ. caudatus* of the Isle of Man appears to be a new race. Specimens preserved in the collection of the Yorkshire Museum have the back almost ivory-black and the scapulars more rose-coloured than is so in either *Æ. c. rosaceus* or *Æ. c. chlamyrhodomelanos*. The differences exhibited by these Manx birds certainly seem to necessitate their separation as another race. The characters of the Irish bird have already been described by Meinertzhagen and it should also be separated.

I now recognize four racial divisions of *Æ. caudatus* in the British Isles as follows :—

(1) *Ægithalos caudatus rosaceus* Mathews, 1938 : Selborne, Hampshire, England.

Less richly coloured above than *Æ. c. chlamyrhodomelanos* and with paler, more violaceous, pink flanks.

Distribution.—England (N.B. Evidence of slight overlap with *Æ. c. europæus* in south-eastern England—the tendency is infinitesimal and does not warrant the separation of these populations as *Æ. c. rosaceus* ≷ *Æ. c. europæus*), Wales, southern Scotland.

(2) *Ægithalos caudatus chlamyrhodomelanos* Clancey, 1941 : Evelix, near Dornoch, Sutherlandshire, N. Scotland.

Strongly coloured above and with a pronounced reddish tinge to the flanks.

Distribution.—The mountainous regions of northern, western and central Scotland. Some Inner Hebrides.

(3) *Ægithalos caudatus* race ?

Nearest *Æ. c. rosaceus* but black of back deeper and scapulars more rose-coloured.

Distribution.—Isle of Man.

(4) *Ægithalos caudatus* race ?

Mainly separable from *Æ. c. rosaceus* on account of the larger and more numerous spots on the lower-throat.

Distribution.—Ireland, where very local.

Notes on East African Birds.

Captain C. H. B. Grant and Mr. C. W. Mackworth-Praed sent the following six notes :—

(1) On the status of *Apaloderma narina littoralis* Van Someren, Bull. B. O. C. 51, 1931, p. 80 : Sokoke Forest, south-eastern Kenya Colony.

Van Someren gives wings 117–125 mm. as against 128–145 mm. in *Apaloderma narina narina* (Stephens) and tails 155–160 mm. as against 160–200 mm. in *A. n. narina*.

We have measured the specimens in the British Museum collection and we find males from Malindi, wing 128, tail 165 ; Shimba Hills, wing 130, tails 172 ; Dera, 40 miles up the Tana River, wings 119–127, tails 164 ; Sigi, Usambara, wing 120, tail 155 ; Mt. Kilimanjaro, wing 128, tail 163 ; Mt. Meru, wings 130–132, tail 173 ; Tete, Portuguese East Africa, wing 131, tail 181 ; Transvaal, wings 129–135, tail 157–182 ; Natal and Zululand, wing 127–132, tails 160–164 ; Uganda, wings 130–134,

tails 186 ; Nyasaland, wing 128–138, tails 162–170 ; 60 miles south of Morogoro, Tanganyika Territory, wing 125, tail 160 ; Cape Province, wings 133–136, tails 164–173 mm. These show that birds from the coastal area have wings up to 130 mm. and that inland ones have wings down to 128 mm. ; tails up to 172 mm. in the coastal area. In females we find :— Mt. Meru, wing 121, Southern Rhodesia, 126 mm. It would therefore appear that the coastal form is not very well differentiated by size. The characters given for the vermiculations on the wing-coverts and those given for the female are to be found in birds as far south as Nyasaland, and although Kenya Colony birds do have a rather darker background to the vermiculations on the wing-coverts this is to be found in birds from other parts of the range of *A. n. narina*. We are therefore of opinion that *A. n. littoralis* Van Someren is insufficiently differentiated and must be considered a synonym of *A. n. narina* Stephens.

(2) On the status of *Myioceyx ruficeps ugandæ* Van Someren, Bull. B. O. C., 41, 1921, p. 105 : Budongo, western Uganda.

We have seen no specimens from western Uganda, but the fourteen specimens of *Myioceyx lecontei* (Cassin) from the Gold Coast to the Upper Congo show considerable variation in the amount of spotting on the top of the head.

As the only character given for *M. r. ugandæ* is the " more decided blue spots on the head " we are of opinion that this is not constant and place *Myioceyx ruficeps ugandæ* Van Someren, as a synonym of *Myioceyx lecontei* (Cassin).

(3) On the status of *Smithornis capensis suahelicus* Grote, O. M., 1926, p. 17 : Magagoni, Ruvu River, eastern Tanganyika Territory ; *Smithornis capensis shimba* Van Someren, Bull. B. O. C., 62, 1941, p. 35 : Makadara Forest, Shimba Hills, south-eastern Kenya Colony, and *Smithornis capensis chyulu* Van Someren, Bull. B. O. C., 62, 1941, p. 37 : Chyulu Range, south-eastern Kenya Colony.

Through the kindness of Dr. Van Someren and of the Trustees of the Coryndon Museum, Nairobi, we have been able to examine a male and a female specimen of *S. c. shimba* and a male of *S. c. chyulu*. These specimens agree well with specimens in the British Museum collection from the Pugu Hills and near Dar-es-Salaam, eastern Tanganyika Territory, which agree with the description of *S. c. suahelicus*.

We further find that all these specimens agree well in size, colour and markings with specimens as far south as Natal, and we can see no character on which they can be satisfactorily divided.

We therefore place *Smithornis capensis suahelicus* Grote, *Smithornis capensis shimba* Van Someren, and *Smithornis capensis chyulu* Van Someren, as synonyms of *Smithornis capensis capensis* (Smith).

(4) On the status of *Phyllastrephus debilis shimbanus* Van Someren, Bull. B. O. C., 64, 1943, p. 12 : Shimba Hills, south-eastern Kenya Colony.

We had hoped to have seen by now a specimen or so of the twelve obtained by Dr. Van Someren, for comparison with the British Museum series, but so far have been unsuccessful. This race was described from 1100 feet and the British Museum have two specimens collected by Robin Kemp in the Shimba Hills at 1000 feet which in no way differ from specimens of *Phyllastrephus debilis rabai* Hartert and Van Someren.

We consider it to be extremely doubtful that there is a different race only 100 feet higher up these Hills and therefore place *Phyllastrephus debilis shimbanus* Van Someren, as a synonym of *Phyllastrephus debilis rabai* Hartert and Van Someren.

(5) On the status of *Budytes superciliaris* Brehm, J. f. O., 1854, p. 74 : Khartoum, Sudan.

This bird and *Budytes xanthophrys* Sharpe, Cat. Bds. B.M. 10, 1885, p. 532 : Lenkoran, Azerbaijan, Iran, have been considered by authors as aberrations of *Budytes thumbergi feldegg* Machahelles.

The Sudan Government Museum has recently sent to the British Museum for naming a series of various yellow Wagtails, and amongst these are three males, two of which have white superciliary stripes and one a yellow superciliary stripe. These agree perfectly with a male in the British Museum collection from Karakol, east of Lake Issyk-kul in eastern Russian Turkestan, with a white superciliary stripe, collected on 8 May, and a male from Lenkoran with a yellow superciliary stripe, collected in March. It seems to us that these five birds show such constant characters that *B. superciliaris* should be recognized as a race, especially as we have seen no intermediates between this race and *B. t. kaleniczenkii* (Kaleniczenko), and that the May bird is no doubt in its breeding area at Karakol, which is on the northern edge of the breeding area of *B. t. kaleniczenkii*.

We place *Budytes xanthophrys* Sharpe, as a synonym of *Budytes thumbergi superciliaris* Brehm.

(6) The distribution of *Bradornis pallidus subalaris* Sharpe, P.Z.S., 1873, p. 713, pl. 58, fig. 1 : Mombasa, eastern Kenya Colony.

All authors have confined this race to the coastal areas of Kenya Colony to northern Portuguese East Africa, but our further examination shows that this race must be extended to as far west and south as the southern Belgian Congo, north-eastern Northern Rhodesia, Southern Rhodesia, Nyasaland, Portuguese East Africa, the Transvaal, Natal and Zululand. There is an overlap in wing measurements over these areas from 77 to 88 mm. for coastal specimens to 79 to 100 mm. for the remainder.

This certainly gives a difference of no less than 21 mm. but we cannot see where a line can be drawn. Furthermore they all resemble each other in general colour, and all are browner, less grey, than *Bradornis pallidus murinus* Finsch and Hartlaub, from Angola and north-western Northern Rhodesia. See also ' Ibis ', 1940, pp. 519 and 735.

A Correction :—

The Editor regrets that the name of the Guest of the Club at the Meeting of the 19 November 1947, has been mis-spelt.

This guest's name should read :—

Lieutenant W. RYDZEWSKI.

Notice.

The next Meeting of the Club will be held at the Rembrandt Hotel, South Kensington, S.W. 7, on Wednesday, 18 February 1948. Dinner at 6.30 P.M.

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

Volume 68.
No. 5.

6 - JUN 1948
PURCHASED

The four-hundred-and-seventy-fourth Meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, S.W.7, on Wednesday, 18 February, 1948, with dinner at 6.30 P.M.

Chairman : Dr. J. M. HARRISON.

Members present :—Miss C. M. ACLAND ; Mrs. R. G. BARNES ; F. J. F. BARRINGTON ; J. FISHER ; Capt. H. A. GILBERT ; W. E. GLEGG (*Hon. Secretary*) ; Miss C. E. GODMAN ; Miss E. M. GODMAN (*Vice-Chairman*) ; Capt. C. H. B. GRANT (*Editor*) ; Miss E. P. LEACH (*Hon. Treasurer*) ; Miss C. LONGFIELD ; Dr. G. CARMICHAEL LOW ; Dr. P. R. LOWE ; J. D. MACDONALD ; C. W. MACKWORTH-PRAED ; Sir P. MANSON-BAHR ; G. M. MATHEWS ; E. M. NICHOLSON ; Col. W. A. PAYN ; Major G. H. R. PYE-SMITH ; Miss G. M. RHODES ; Lt.-Cmdr. C. P. STAPLES ; Dr. A. LANDSBOROUGH THOMSON ; B. W. TUCKER ; C. N. WALTER ; Mrs. H. W. BOYD WATT ; A. WILLIAMS ; C DE WORMS.

Guests :—Mrs. M. V. GILBERT ; R. J. B. GLANVILLE ; Cmdr. G. W. HARPER ; Mrs. P. R. LOWE.

Members, 29 ; Guests, 4 ; Total, 33.

A new Race of White-eye from Kenya Colony.

Mr. J. G. WILLIAMS sent the following description and the type for exhibition :—

ZOSTEROPS PALLIDA KULALENSIS, new race.

Description.—Similar to *Zosterops pallida winifredæ* Sclater and Moreau, but larger.

Published 25 March, 1948. PRICE 2/6.

Wing 62–65 mm. as against 58–60 mm. in *Z. p. winifredæ*.

Distribution.—Mt. Kulal, northern Kenya Colony.

Type.—In the British Museum. Adult male, collected at Mt. Kulal, northern Kenya Colony, on 8 October 1947, by J. G. Williams. Brit. Mus. Reg. No. 1948–1–3.

Measurements of type.—Wing 64, culmen from base 15, tail 48, tarsus 20 mm.

Remarks.—Eight males and three females were obtained.

This race inhabits mountain mist forest, usually in very large flocks, though sometimes in small parties. Call-note very like *Z. virens jacksoni* Neumann, but perhaps softer and more continuous. Stomach-contents were minute insects, spiders and the fruit of a species of *Loranthus*. Some males had very enlarged testes in early October and were apparently within a few weeks of breeding. The series of this new race were collected when I was attached to the Carlsberg Foundation Expedition from Copenhagen.

Notes on Sarothura ayresi and three birds new to Abyssinia.

Mr. K. M. Guichard sent the following, with specimens for exhibition :—

Sarothura ayresi (Gurney). Grant and Mackworth-Praed (Bull. B. O. C. 66, 1946, p. 37) examined an adult male of this pigmy rail taken from near Addis Abeba by Patritzi and placed it in the Genus *Sarothura*. They had already suggested in Bull. B. O. C. 62, 1941, p. 32, that the type of *Coturnicops macmillani* described by Bannerman, Bull. B. O. C. 29, 1911, p. 38, from a male taken in Kaffa, south-western Abyssinia, was really the same as *C. ayresi* from South Africa described by Gurney in 1877, and of which only females are known from the Cape, Orange Free State, and the Transvaal. Three are in the British Museum.

During the Italian occupation of Abyssinia, Patritzi is known to have collected at least four specimens of the White-winged Rail, including a female from Sululta, near Addis Abeba, but only one, the male examined by Grant and Mackworth-Praed, appears to have survived the Abyssinian re-occupation, and is in The Coryndon Museum, Nairobi.

To make absolutely certain that the Abyssinian and South African birds were the same it remained to discover Abyssinian females to compare with the South African ones. While in Abyssinia I was aware of this problem in 1945, but apart from Rouget's Rail I saw no rails until July 1947, although I had been in many suitable localities.

On 11 July I visited a small marsh near Gafersa, 18 kms. west of Addis Abeba, *c.* 7500 feet, to see if the African Snipe had arrived on the high plateau, and the boys disturbed a tiny rail with a conspicuous white wing patch. Guessing what it was I offered a reward for its capture, and in ten minutes it was flushed again, and after an exciting chase it was caught by hand and brought to me—a male of *S. ayresi* with, as it proved, greatly enlarged testes. Four evenings later I shot another male and the boys caught a second one near Gafersa in the same marsh. These birds and subsequent ones all had greatly enlarged testes. On 17 July I shot two more males, and thought I had cleared this one acre marsh of the species. On the 25th I saw two more, but failed to get a specimen as rail hunting was becoming a national sport, and it was dangerous to shoot into the crowd. The climax was reached on 30 July when two females were obtained in absolutely fresh plumage, after which I found no more rails at Gafersa.

Monsieur A. Salim of Addis Abeba very kindly secured four males on 10 August on Sululta Plain while shooting snipe, and two of these together with all mine are in the British Museum Collection.

The females from Gafersa established beyond doubt that the Abyssinian and South African birds belong to the same species.

The problem of *Sarothura ayresi* is interesting, and it has been suggested that the White-winged Rail migrates to breed in Abyssinia from South Africa where it has been recorded from August to November. Abyssinian records are from May to August, but the only May record is from Kaffa.

It is certain that *S. ayresi* arrives on the high plateau near Addis Abeba to breed from an unknown area during July. Considering that both sexes were easily flushed at Gafersa I am convinced that the males arrive first. The one acre marsh is obviously a special habitat, where rushes and marsh orchids grow and the dark water is ankle deep. The marsh has one quaking spot amongst the decaying vegetation. Snipe come to it on migration, but it is nearly dry in April when livestock graze over it. The Sululta locality is different, consisting of close dry grass clumps partly submerged during the rains, but bone dry later, and three species of snipe are found there.

I believe the White-winged Rail will yet be discovered in other localities between Abyssinia and South Africa. I prefer to think its migration to breed on the Abyssinian high plateau is purely a local one, and it probably arrives from the ornithologically little-known swamps of western Abyssinia, a theory supported by the Kaffa record. Even such a journey, bearing in mind the bird's weak flight which enables it to be caught by

hand, is sufficiently incredible without frequent halts. Perhaps the marsh at Gafersa may be one of the regular resting stages, and the breeding takes place on Sululta Plain not more than twelve miles distant. The environments of both localities are unique, at least within a fifty mile radius of Addis Abeba.

Sarothura rufa rufa (Vieillot). On 30 July in the small marsh at Gafersa I shot a female Red-chested Pigmy-Rail which was flushed. The bird was in very fresh plumage, and its presence seems no less interesting than that of *S. ayresi* on the same day, and the remarks on the latter possibly apply to *S. rufa* also. This is a new record for Abyssinia.

Porzana pusilla obscura Neumann. On 7 July, while returning from a duck shoot near Sabotha not far from Addis Abeba, my boys caught with their hands a female Baillon's Crake in a marsh full of rushes. This bird contained a perfect egg, and the record apart from being an addition to the Abyssinian list constitutes the furthest north breeding locality for the race *P. p. obscura* in Africa. The local people seemed to be familiar with the bird and wished to use it as strong medicine.

Locustella nivea straminea Seebohm. The Grasshopper Warbler has not yet been recorded from Africa south of the Sahara. I shot one belonging to the Asiatic race on 12 February 1947, in dense grass cover along the River Hawash at Abroberifaghé. This place in the Danakil is on the threshold of Aussa, where the Hawash disappears into a series of lakes where dense fringing bush frequently offers a most suitable environment for migrants.

All the above-mentioned specimens are now in the British Museum.

Pathological conditions in Birds.

Dr. James M. Harrison exhibited the following pathological conditions in birds :—

1. Examples of fractures in birds showing that contrary to popular ideas, natural unaided union is only attended with satisfactory results when the fracture is situated in a position where displacement of fragments cannot readily take place, *e. g.*, in the tarsus, where the scutellæ afford natural splintage. This type is seen in the fracture of a Water-Hen, *Gallinula chloropus chloropus* (Linnæus).

In situations where unopposed and uncontrolled muscle pull occurs, nature's results are bad, as shown by the gross deformity and mal-union of the fracture of the femur of Stock-Dove, *Columba œnas* Linnæus, and even more impossible position in which the fragments of the humerus of the Goosander, *Mergus merganser merganser* Linnæus, have united,

resulting in a long bone assuming the shape of a Z. Despite these very poor orthopædic results, function is nevertheless often surprisingly adequate ; mostly these fractures in birds are the result of healed gun-shot wounds, while occasionally the bird dies of a gas gangrene infection.

2. The sternum of a female Peregrine Falcon, *Falco peregrinus peregrinus* Tunstall, showing a curious and symmetrical fusiform swelling of the keel. This bird, for which I am indebted to Captain C. W. R. Knight, is a bird of the year, and died in captivity during the night of 7–8 August 1931. It was somewhat wasted, and showed evidence of air-sac disease. It is thought that the swelling of the keel was due to a proliferative reaction, resulting from the mycotic infection entering the keel through the ostia on its inner surface.

3. An adult male Greenfinch, *Chloris chloris chloris* (Linnæus), 21 April 1938, Sevenoaks, Kent. This bird was seen in life to have its skull devoid of any covering at all. It was shot. On examination the vault and occipital regions show the bone exposed and highly polished, at the occiput proper there is a deep transverse erosion exposing the middle layer of the skull. The bird showed no signs of having been in captivity, and was in all other respects quite healthy.

An adult female Yellow Bunting, *Emberiza citrinella citrinella* Linnæus, 13 April 1940, Romney Marsh. A wild shot bird, observed in the field to be " bald ". In this specimen the feathers were denuded, the skin was not adherent to the underlying skull, and the bird was otherwise quite healthy. On reflecting the skin, the vault of the skull is seen to be irregularly eroded, but the middle, or cancellous, layer was not exposed.

The nature of these cases is obscure. Popularly referred to as " hen-pecked ", these individuals look in every other respect normal. I doubt the trauma (injury) theory. Originally * I had regarded such cases as analogous to the condition of osteogenesis imperfecta, a developmental defect. This view may equally well be proved incorrect. An attempt was made to culture a fungus from these specimens, but without success. Examination of quite fresh material is required before a mycotic disease can be definitely excluded.

On the British race of Emberiza citrinella Linnæus.

Mr. P. A. Clancey sent the following note :—

Meinertzhagen, Bull. B. O. C. 67, 1947, pp. 91–93, in supporting the separation of the British race of *Emberiza citrinella* Linnæus, advocated

* Journal of the Bombay Natural History Society, 15 Aug. 1933.

the use of the name *Emberiza citrinella nebulosa* Gengler, 1920, *vide* Arch. f. Naturg. 85, Abt. A. Heft 5, 1920, p. 91, described from southern England, Holland and northern France, in preference to *Emberiza citrinella caliginosa* Clancey, 1940, *vide* ' Ibis ', 1940, p. 94 : Dornoch, Sutherlandshire, northern Scotland. This opinion of Meinertzhagen's is not supported by the evidence available to me.

The type-locality of *E. c. nebulosa* has been fixed by Meinertzhagen (*loc. cit.*) as Stalham, in Norfolk, from which locality he examined two specimens.

In view of Meinertzhagen's opinion I have re-examined my large series of British material and find that the East Anglian breeding series of twenty skins is the same as those from near European countries. When compared with western British birds (*E. c. caliginosa*) they are seen to have much paler yellow surfaces, and the napes and mantles are appreciably paler and greyer. The striæ of the breasts and flanks are less pronounced. A tendency to a deeper tone of yellow is perceptible in one or two males, but the majority are too pale to permit of union with the western populations. The general impression culled from an impartial evaluation of the characteristics of these East Anglian birds is that they are essentially intermediate in that they exhibit a minor approximation (*c.* 20 per cent.) towards western birds, *E. c. caliginosa*, while others cannot be separated from near European as well as Scandinavian specimens. Gengler (*loc. cit.*), in uniting the birds of England (Norfolk and Berkshire specimens examined), Holland and northern France under the one racial terminal, must have considered them to be reasonably homogeneous in their essential differences from *E. c. citrinella*. It is clear that he was not aware of the darker and more heavily striated birds of the western British populations or else he would not have been tempted to unite Dutch and northern French *E. citrinella* with the English bird. In other words, Gengler intended his name, *E. c. nebulosa*, for the intermediate populations. As already stated, only a small proportion of south-eastern English birds are near *E. c. caliginosa*, the majority being similar to the nominate race, and, therefore, *E. c. nebulosa* Gengler, 1920, can be placed in the synonymy of *E. c. citrinella* Linnæus, 1758.

With the data now at my disposal I would suggest the following classification for the indigenous *E. citrinella* of these islands :—

Emberiza citrinella caliginosa Clancey, 1940 : Dornoch, Sutherlandshire, Northern Scotland.

Darker and richer and more heavily striated than *E. c. citrinella* Linnæus.

Distribution.—Scotland and Isles, Ireland, Isle of Man, Wales, northern and western districts of England. Ranging to Ushant, Finistère, France, *vide* Clancey, ' Ibis ', 1947, p. 652.

Emberiza citrinella citrinella≷*Emberiza citrinella caliginosa*, =*E. c. nebulosa* Gengler, 1920.

Intermediate populations.

Distribution.—Most of southern and south-eastern England. Ranging to Holland, Belgium, France, and perhaps to western Germany.

The type-localities of three British races of Paridæ described by Pražák.

Mr. P. A. Clancey sent the following note :—

Pražák, in his descriptions of new British races of Paridæ, published between 1894–1897, designated no types nor type-localities. Details of the material used by Pražák and its present whereabouts are not available, and it now seems desirable to designate precise type-localities.

1. *Parus major newtoni* Pražák.

In ' Ibis ', 1938, p. 748, I indicated that south-western Scottish populations differed from English *P. m. newtoni*, and this matter was still further explored by Dr. J. G. Harrison, Bull. B. O. C. 65, 1945, pp. 26–27. Dr. J. M. Harrison, Bull. B. O. C. 66, 1946, pp. 24–28, referred to an overlap of *P. m. major* and *P. m. newtoni* in south-eastern England. In Bull. B. O. C. 66, 1946, p. 43, I gave further details in support of Dr. J. M. Harrison's contention. In Bull. B. O. C. 65, 1945, p. 44, I pointed out the interesting characters exhibited by two birds from Dornoch, Sutherlandshire, northern Scotland, and this question was carried further in notes by Clancey, Bull. B. O. C. 66, 1946, pp. 86–87 ; ' Ibis ', 1947, p. 510. The data supplied by these notes necessitate a precise type-locality fixation. I propose, therefore,

Lake District, England,

as the type-locality of *Parus major newtoni* Pražák, Orn. Jahrb. 1894, p. 239—" England ". The diagnostic characters of the race obtain in this locality which is far removed from regions of Continental racial interpenetration.

2. *Parus cæruleus obscurus* Pražák.

In ' Ibis ', 1947, pp. 119–120, I supplied data on the known divergent trends within the race *P. c. obscurus*. Further study of British populations with a still larger material than that available to me in 1946 may result

in the separation of a Scottish montanic form. In order to facilitate matters I propose

LAKE DISTRICT, ENGLAND,

as the type-locality of *Parus cæruleus obscurus* Pražák, Orn. Jahrb. 1894, p. 246—" England ". Lake District birds exhibit constant racial characters.

3. *Parus cristatus scoticus* (Pražák).

For the type-locality of his *Lophophanes cristatus scotica* Pražák simply gives " Scotland ". The race is extremely localized in Scotland, and it is imperative that we fix the type-locality somewhat more precisely. I therefore propose

STRATH SPEY, SCOTLAND,

as the type-locality of *Parus cristatus scoticus* (Pražák), J. f. Orn. 1897, p. 347—" Scotland ".

Notes on East African Birds.

Captain C. H. B. GRANT and Mr. C. W. MACKWORTH-PRAED sent the following two notes :—

(1) On the status of *Cinnyris superbus buvuma* Van Someren, Nov. Zool. 37, 1932, p. 352 : Buvuma Island, Lake Victoria, Uganda.

This race was based on size of males, the wing-measurements being given as 83 mm. The British Museum series gives wing-measurements as follows :—Cameroon to Gabon, males 73–76, females 69–71 ; Angola males 75–77, females 71–72 ; Belgian Congo, males 77–80, females 73–75 ; Uganda males 77–79 mm. Van Someren gives for Uganda males 80–81, and females 73–76 mm. The above measurements show a gradual and continuous increase from west to east without a line of demarcation. It is therefore difficult to define a geographical distribution, and we prefer to regard *Cinnyris superbus buvuma* Van Someren as a synonym of *Cinnyris s. superbus* (Shaw).

(2) On the status of *Poliospiza striolata ugandæ* Van Someren, Bull. B. O. C. 41, 1921, p. 114 : Mt. Elgon.

This race was compared to *Poliospiza striolata graueri* Hartert, as being paler on breast, and black streaks on chest narrower. These characters agree perfectly with *Poliospiza striolata striolata* (Rüppell), and of which we place *Poliospiza s. ugandæ* Van Someren, as a synonym.

Notice.

The next Meeting of the Club will take place on 17 March, 1948, at the Rembrandt Hotel, Thurloe Place, S.W. 7. Dinner at 6.30 P.M.

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

1 JUL 1948
PURCHASED

Volume 68.
No. 6.

The four-hundred-and-seventy-fifth Meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, S.W.7, on Wednesday, 17 March, 1948, with dinner at 6.30 P.M.

Chairman : Dr. J. M. HARRISON.

Members present : F. J. F. BARRINGTON ; Mrs. G. M. CHADWYCK-HEALEY ; C. T. DALGETY ; J. FISHER ; W. E. GLEGG (*Hon. Secretary*) ; Miss C. E. GODMAN ; Miss E. M. GODMAN (*Vice-Chairman*) ; Capt. C. H. B. GRANT (*Editor*) ; Dr. J. G. HARRISON ; R. E. HEATH ; Miss E. P. LEACH (*Hon. Treasurer*) ; C. W. MACKWORTH-PRAED ; J. H. MCNEILE ; G. M. MATHEWS ; E. M. NICHOLSON ; Lt.-Col. W. A. PAYN ; H. J. R. PEASE ; A. A. PRESTWICH ; R. A. W. REYNOLDS ; Miss G. M. RHODES ; Lord HUGH RUSSELL ; PETER SCOTT ; Lt.-Commdr. C. P. STAPLES ; Dr. A. LANDSBOROUGH THOMSON ; C. N. WALTER ; A. WILLIAMS ; C. DE WORMS.

Guests :—Capt. R. A. JACKSON ; Miss C. JOHNSTON, D. MACPHIE, R. C. WITTING.

Members, 28 ; Guests, 4 ; Total, 32.

A new Race of the Whitefronted Goose.

Mr. C. T. DALGETY and Mr. PETER SCOTT made the following remarks and exhibited the type and other specimens :—

Tonight we propose to show that two races of the Whitefronted Goose winter regularly in the British Isles, one coming from breeding grounds in Arctic Russia, the other from breeding grounds in North West Greenland ; and, surprisingly enough, these races are distinguishable not only

in the hand, but in the field. It seems remarkable that such a distinction in so large a bird as the Whitefronted Goose has not been recognized earlier, and that this new race has not already been given a name. This omission may be partly due to the confusion which has existed about the races of the Whitefronted Goose which inhabit North America. In order to make this clear a brief historical survey is necessary.

The common Whitefronted Goose, *Anser albifrons albifrons*, was described by Scopoli in 1769 with a specimen taken presumably in northern Italy. (It was described incidentally as *Branta albifrons*.) In 1852 Hartlaub described a larger race from three specimens, two taken in Texas and one in " the south of North America ". The Texas birds were immature and the third bird is said to have been " almost adult ". He named this race *Anser albifrons gambelli* after a young ornithologist, William Gambel (1819–1849), who was a protégé of Nuttall, and was one of the first ornithologists to visit California.

For many years it was assumed that all Whitefronted Geese in America belonged to the race *A. a. gambelli*. More recently, however, it was discovered that two races of Whitefronted Geese inhabited North America. The most common, with a wide distribution in the western half of the North American Continent, proved to be apparently indistinguishable from the typical *A. a. albifrons* of Europe and Asia. A much less numerous race was recognized by the duck and goose hunters of California, and given the name Tule Goose (pronounced Tooly) from its winter habitat amongst willows and reeds, the latter being known locally as " tules ". This bird, which was considerably larger than the typical form, appeared to have a very restricted winter range confined to a few special marshes in the valley of the Sacramento in California. Its breeding range was at that time quite unknown. Swarth and Bryant in an admirable paper (University of California, Zoology, October 1917, vol. 17, no. 11, pp. 209, 222) came finally to the conclusion that the Tule Goose of California was synonymous with *A. a. gambelli* of Hartlaub. A detailed description of the Tule Goose will be given later, but it may be of interest to record that the nest of the Tule Goose is reported to have been found on a lake near the Perry River in the Canadian Arctic about half-way between Baffin Land and the McKenzie Delta on 26 July, 1941. Some doubt still surrounds this record.

Kortright (1942), referring to the finder, a Hudson Bay Company's Post Manager named Angus Gavin, who had discovered the breeding grounds of the Ross's Goose for the first time, says, " Gavin estimated that he saw about 300 pairs of these geese (Tule Geese) in the vicinity. He also found a nesting colony of the smaller Whitefronted Goose about

6 miles away from the nesting Tule Geese, and states that the two varieties of Whitefronts kept strictly apart. A specimen of the large Tule Goose and the smaller Whitefronted Goose were shot. From the marked difference in the estimated weights of the two birds, Gavin, a most reliable observer, feels confident that he has probably found the nesting grounds of the Tule Goose ".

This evidence of the proximity of the breeding grounds of *A. a. albifrons* and *A. a. gambelli*, together with the presence of both in different habitats in the same districts in California in winter, may well indicate that the latter will ultimately prove to be a different species.

The finding of the breeding grounds of the Tule Goose in the Perry River district links up with the localities of two of the three supposed Tule Geese in the British Museum. Of these three, one comes from Texas, and the other two from the North-West Territories of Canada. Each of these arctic specimens is connected with a famous geographical exploration. One was collected by Dr. John Rae on his " Expedition to the shores of the Arctic Sea ", being killed on 1 June, 1847, at Repulse Bay. This expedition, which was sent by the Hudson's Bay Company, spent the winter of 1846–47 at Fort Hope, which is in Repulse Bay on the south side of the isthmus of Melville Peninsula (to the north of Hudson's Bay and just inside the Arctic Circle). The other was collected by Captain Back in 1834 on his " Northern Land Expedition ", which travelled the full length of the Back River, then known as the Great Fish River. Back left Sussex Lake, the source of the river, on 28 June, was on the estuary and coast from 29 July to 21 August, and returned to Sussex Lake on 17 September. He started from a point south-east of Perry River, passed to the south of it, and reached the coast midway between it and Repulse Bay. The exact date and locality of this specimen is not known. From these three specimens it would appear that the breeding ground of the Tule Goose is within the 500 miles of Arctic Canada lying between Longitudes 85° and 105°.

In 1938 Scott visited the haunts of the Tule Goose at Butte Creek in Colusa County, California, but was unlucky in that he could not find any of the large race that day.

In 1934 Dalgety, while on the west coast of Greenland, secured two specimens and one nest of the Whitefronted Goose. The significance of the bill colouring was not then known to him, and so he was not keeping a special look out for it. Unfortunately these two specimens did not show him the true bill colouring because one had the head almost destroyed by a large bore rifle bullet, while the other was not critically examined until some time after death.

At that time (June 1934), Dalgety was told by Governor Rosendhal at Godhavn, Disco, that young wild geese were sometimes brought in and fattened until October, when they were killed to be eaten at Christmas. As these geese were said to have yellow legs they were almost certainly Whitefronted Geese.

Dalgety was not likely to be returning past Godhavn in the autumn, so communicated this information to the late David Haig Thomas, who was expected to pass through Godhavn in August of the same year, and again in the autumn of 1935 after wintering as a member of the Oxford University Ellesmere Land Expedition. As a result, in September 1935, he brought back two live young Whitefronted Geese which Governor Rosendhal had obtained for him.

When he first saw these birds Scott noticed that the bills were orange-yellow, and that the plumage was rather dark. He was at first inclined to dismiss these characters as possibly some individual family variation (since the birds were brother and sister) or possibly some nutritional difficiency due to the fact that they had been brought to England as goslings by sea, and had therefore obtained very little green food.

In 1937 Haig Thomas made arrangements for eight more live geese to be sent back from Greenland. Every bird was similar to the original two. Four of them were sent to Scott to join the collection at his Light-house on the Wash. It was not until they were seen in company with the other Whitefronted Geese—some twenty typical *A. a. albifrons* taken in Hungary and in Norfolk—that the full significance of the striking difference first impressed us. The orange-yellow bill and the dark plumage contrasted most noticeably with the pink bill and pale plumage of the typical form.

It chanced that in the same year Scott was visiting America and was informed that the Whitefronted Goose is a very uncommon bird on the Atlantic Coast of that continent. Furthermore, it seemed that the Whitefront, or Speckle-Belly as the American duck hunter calls it, of the middle and western States was indistinguishable from the typical form. Where, then, did the Greenland birds winter ? It was at this stage that we chanced upon a description of the Whitefronted Goose by Payne Gallwey in his " Letters to Young Shooters ", 1896. " The bill *all one shade, orange yellow* except the tip, which *white* " (italics his). We had always wondered about this apparent error from so careful an observer, but now, remembering that he had done most of his wildfowling in Ireland, the possibility occurred to us that this might be the winter quarters of the yellow-billed Greenland bird. Further research showed that Gould also described the bill as orange yellow when referring to a pair of geese sent to him by Lord Enniskillen from the county of Fermanagh.

This called for an immediate expedition to Ireland to put this theory to the test. Early in 1939 Scott spent a week trying to outwit a party of Whitefronted Geese on Lough Foyle in Northern Ireland. The light was very bad each day and the birds were very elusive until the last night of our visit, when at midnight, from our gunning punt, we were lucky enough to shoot three of a flock which flew over. Two of the birds were killed, but the third was only wing-tipped and was kept alive. By the light of a torch we peered excitedly at the bills and tried to determine whether they were pink or orange. This proved impossible, and the matter was not finally settled until dawn began to break. It was then quite evident that we had three birds of a similar race to those sent by Haig Thomas from Greenland. The live bird joined the collection at the lighthouse where, upon comparison, it was perfectly clear that it was the same as the four from Greenland.

All the available evidence, therefore, pointed to the fact that a distinguishable race of Whitefronted Goose bred on the West side of the Greenland Ice Cap, and wintered mainly in Ireland. (It would be misleading to speak of West Greenland in this connection, as the breeding area lies partly within the Governmental district of North Greenland.) Since that time careful study has been made of the Whitefronted Geese in Ireland, and in nearly all cases they have proved to belong to the yellow-billed race. The only exceptions were a small number recorded during the winter of 1946–47, when an unusually large influx of *A. a. albifrons* occurred in England, and when they were subsequently scattered by the severe weather. One of the birds shot near Dublin at this time was kept alive and is now in the Dublin Zoo. The reason for this was that Mr. Fred Fox, who shot it, recognized at once that this was something different from the usual Irish Whitefront, having paler plumage, and a noticeably smaller and pink bill. Conversely, in the winter of 1937, a Greenland Whitefront was shot in Westmorland by Mr. W. M. Bratby. He was conversant with the typical Whitefront and immediately recognized this as being something different. In fact he first mistook it for a Bean Goose, *Anser arvensis* Brehm, owing to its dark plumage and yellow bill ; being a juvenile it had a dark nail and no black on the breast. The yellow-billed race has been recorded from the west of Scotland, Westmorland, Wales and Gloucestershire ; in England, however, the records are of single birds or small numbers. It is also probable that those few Whitefronted Geese which winter on the Atlantic coast of North America belong to this race.

Two minor complications, among many, should here be recorded. In 1902 Coburn, in ' Zoologist ', 1902, pp. 337, 351, assigned a number of Whitefronted Geese collected in western Ireland to *A. gambelli*. From

a series of Irish birds he picked a certain number which he regarded as the American form, whilst others were assigned to the typical form. It appears likely, however, that he was making his selection from a series of the hitherto undescribed race. He had not apparently noticed the difference in the colour of the soft parts, but was guided by the larger measurements which, as will be shown later, are sometimes a character of the yellow-billed form.

The second complication was that the Greenland birds were again erroneously assigned to *A. a. gambelli* by Schiøler in ' Danmarks Fugle ', 1923. Schiøler was aware of the distinction in the plumage and also in the measurements of the Whitefronted Goose breeding in Greenland, but again ascribed it to the American race. And here an interesting error crept in. The illustrations for this monumental Danish work were most exquisitely painted by Mr. T. Larsen. They were made, however, largely from skins, in the case of the Greenland birds, from which the colour of the soft parts can, of course, only be guessed. Mr. Larsen therefore painted the bills of the Greenland Whitefronts in the colour which he knew to be that of the typical Whitefronted Goose—that is to say, pale pink. The main point, however, is that Schiøler had accepted a definite distinction between the Greenland breeding Whitefront and the typical Whitefront of Europe. He had accepted it on the basis of measurement and plumage colour without using, or apparently discovering, the important distinction in the colour of the bill.

It is interesting to observe how the failure to recognize the Greenland race, together with the misuse of the name *A. a. gambelli*, has led to a great deal of misunderstanding and even asperity between ornithologists. There is scarcely a book on palæarctic ornithology which does not in some way allude to either white-fronted geese with yellow bills or to *A. a. gambelli* in a manner which can now be considered to be mistaken.

The next problem was to find a suitable type-specimen for the description of the new race. This could not be undertaken for various reasons until the end of the war. The significance of the bill colour and the rapid fading of this colour within a few minutes of death made the problem a very difficult one. No skins in collections or museums could be regarded as satisfactory for this reason. A pair of live birds taken in Greenland had been sent from Copenhagen to the London Zoo, and a second pair was sent to the collection of the Severn Wildfowl Trust in Gloucestershire. In both cases these birds were typical of the Greenland race, but it was not thought altogether satisfactory to use them as type-specimens in view of the difficulty of taking measurements from a living bird.

Meanwhile Dr. Finn Salomonsen of the Zoological Museum, Copenhagen, had undertaken some extensive ringing of the geese on the breeding grounds in Greenland, and already during the winter of 1946–47 a number of recoveries of these ringed birds were recorded. Nine were returned from Ireland, one from Wales, and one from eastern Canada. Further ringing was undertaken in the following year, and during the past winter an even larger number of recoveries has been made. Rewards were therefore offered for the immediate delivery of freshly killed specimens bearing rings. This was successful and a number of ringed birds are now available to science in the form of skins. Dalgety visited Ireland in 1947 and was fortunate enough to secure a ringed immature a few minutes after it had been killed. This bird has been selected, together with an adult shot by him at the same time, and the adult will be the type specimen of the new race as both specimens conform as nearly as possible to the requirements which we had set ourselves,—a bird whose skin is satisfactorily preserved, whose bill colours were recorded within a few minutes of death, and whose breeding ground and wintering ground were known and linked by the aluminium ring.

Such is the history leading up to the final recognition of the race which is now for the first time, fully described and compared with allied forms.

We propose :—

ANSER ALBIFRONS FLAVIROSTRIS, new race.

The Greenland Whitefronted Goose.

Greenland name.—Nerdlernak.

Synonymy.—*A. a. albifrons* (Scopoli). Winge, Grønlands Fugle, 1898, p. 116.

A. a. gambelli (Hartlaub). Schiøler, Danmarks Fugle, 1923, p. 444.

Description.—*A. a. flavirostris* can be distinguished from both *A. a. gambelli* and *A. a. albifrons*. This Greenland race does not have the yellow orbital ring of *A. a. gambelli*, nor the heavy pink bill, nor is it so large. It is evidently, therefore, quite distinct from *A. a. gambelli*. In comparison with *A. a. albifrons*, whether from Europe, Asia or America, the following differences are apparent :—

Plumage colour of *A. a. flavirostris* is darker ; light tips of mantle feathers are narrower ; white tips of tail-feathers are shorter ; bill colour is quite different. Even in the field, the darker plumage and yellow bill of the Greenland race are conspicuous features for comparison with the lighter plumage and pink bill of *A. a. albifrons*. In a good light the two races are unmistakable when seen in flocks, though some individual

birds can be puzzling. In the hand it is almost impossible to confuse them.

The general character of the upper plumage, as a whole, of *A. a. flavirostris* is dark " nigger brown " with little or no " rufous " or " russet " pigment. That of *A. a. albifrons* is " ash brown " tinged with " rufous ". This difference is most noticeable on the hind neck and upper mantle, *A. a. flavirostris* having these parts the colour of plain chocolate, while in *A. a. albifrons* they are the colour of milk chocolate. Also the pale tips of the mantle feathers of *A. a. albifrons* give a markedly striped appearance which is not nearly so evident in *A. a. flavirostris*.

There seems to be a tendency in *A. a. flavirostris* for the belly to be more heavily marked with black bars than in the nominate race. The spotted appearance of the breast and belly of some immature White-fronted Geese appears to be more common and more distinct in *A. a. flavirostris* than in *A. a. albifrons*.

The following are the descriptions of the colours of the various parts, matched as nearly as possible with Ridgeways Colour Standards, 1912 :—

A. a. flavirostris.	*A. a. albifrons.*
Bill of Adult.	
The pearl-pink ground colour is present, but largely concealed by the yellow or orange. This pink is nearest to I La France Pink or I Shrimp pink, but is more delicate fleshy or pearly colour. The yellow or orange which varies from III Cadmium orange, Orange or Cadmium yellow, is present as a brilliant colour on middle of culmen and the whole length of the sides of (tomia) upper mandible and rami of lower mandible. On forward quarter of upper mandible the orange-yellow shades into the pink. Completely surrounding nostrils is an area of orange yellow. This and the orange yellow of tomia shade with the pink. The soft skin between the rami of lower mandible is III Cadmium yellow.	The whole bill is normally pearl-pink except on small area of middle of culmen and under middle half of rami of lower mandible which may be a clear III Cadmium yellow to III Orange but is usually only tinted yellow.
Bill of Juvenile.	
Entirely III Cadmium yellow to Orange.	Pearl pink to dull yellowish.

Nail of Bill.

In both races the nail in the juvenile gosling is dark horn or black, in the adult white. During immaturity there is a slow transition through the varying shades of greyish horn from black to white.

1 Immature. 2 Adult. 3 Adult. — *A. a. albifrons.*

4 Immature. 5 Adult. 6 Adult. — *A. a. flavirostris.*

Immature. Adult. Adult. Immature. Adult. Adult.

A. a. albifrons *A. a. flavirostris*

Feet.

II Orange chrome to III Cadmium orange or III Orange.	III Orange to III Cadmium yellow.

Base of Neck.

XLVI Fuscous Black.	XV Prouts Brown, XXIX Snuff Brown.

Mantle.

XLVI Fuscous Black tipped with XV Prouts Brown to XXIX Bister.	XL Clove Brown tipped XV Prouts Brown or inner tip XV Mummy Brown to XL Clove Brown with outer tip XL Tilleal Buff or XLVI Light Drab or Drab Grey.
Mantle feathers with pale tips of 2 mm.	Mantle feathers with pale tips of 4 mm.

Side of Head.

XLVI Fuscous Black.	XL Wood Brown, XLVI Drab.

Rump.

LIII Blackish Slate, LI Blackish Mouse Grey.	XL Clove Brown, XLVI Fuscous Black.

Breast.

Background shade slightly sooty.	White.

Tail.

Second feather from centre white tip, 6–9 mm.	White tip, 13–17 mm. (exceptions amongst juveniles).

In size the Greenland bird perhaps averages slightly larger than the nominate race. Its bill is definitely longer, though measurements overlap, being one-tenth as long again. The length of culmen of *A. a. flavirostris* also overlaps with that of *A. a. gambelli*.

The length of tarsus of both the nominate and Greenland races are similar and do, exceptionally, overlap with that of *A. a. gambelli*. In fact the culmen gives the only measurement of comparative value.

Distribution.—Breeding west coast of Greenland. In winter to western parts of British Isles and Atlantic Coast of North America.

Type.—In collection of C. T. Dalgety. Adult male collected at North Slob, Wexford, Eire, on 26 November, 1947, by C. T. Dalgety. Field Book No. D 17.

Co-Type.—In collection of C. T. Dalgety. Juvenile male. Same place and date as type. Shot by Capt. A. Barclay. Field Book No. D 22. Bearing ring of Zoological Museum Copenhagen, No. 270810. Ringed Sarqaq, Jakobshavn District, Greenland (70° 6′ N., 52° 8′ W.) in July 1947.

Measurements of Type (taken in the flesh).—Total length 29½; wing-span 61 inches. Wing 445; tarsus 73; culmen 50; height of upper mandible 26; greatest length of bill 56·5; visible depth of lower mandible 7; breadth at base of bill 25 mm. Weight 6 lb. 4 oz. (a very well-conditioned bird).

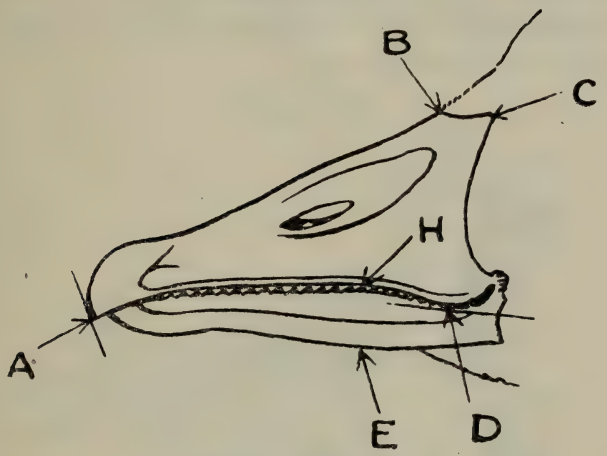
Table of Measurements etc.

Race and Country.	Quantity of Material.	Culmen.	Tarsus.	Length.	Weight (lb. oz.).
A. a. gambelli. America.	10 Swarth and Bryant.	..	..	745–854	Min. 5·5
	3 B.M.	53–62	77–84		
	3 Moffit	..	..	..	6·3 7·0 7·8
A. a. flavirostris. Greenland and western British Isles.	23 C. T. D.	..	..	660–750	Max. 6·4 Av. 5·7 Min. 4·12
	17 B.M.	45–57	63–76		
	15 Coburn				
A. a. albifrons. America.	20 Swarth and Bryant	..	..	..	Max. 5·8
	8 B.M.	44–52	64–79	685–736	
	2 Moffit	..	..	..	4·0 5·0
A. a. albifrons. Europe and Asia (Britain included).	18 B.M. E. Asia 8 B.M. E. Med.				
W. Europe	11 B.M.	40–53	62–74	635–760	
	6 C. T. D. W. Europe	..	1 of 77	..	Max. 6·3
	31 Alpheraky Eurasia.	1 of 56	51–81	..	Max. 6·8 Min. 4·0
	21 Popham. W. Europe	..	..	..	Av. 5·8

Measurements of Co-type (taken in the flesh).—Total length 28½; wing-span 57 inches. Wing 395; culmen 53; tarsus 76·5; height of upper mandible 26; greatest length of bill 60; visible depth of lower

mandible 7 ; breadth at base of bill 26 mm. Weight 6 lb. (a very well-conditioned bird).

Text-figure 1.



Bill measurements.

A B.—Culmen.
C D.—Height upper mandible.
A C.—Greatest length.
H E.—Visible depth, lower mandible (this includes teeth of upper mandible.)

Summary.

The Tule Goose, *A. a. gambelli*, differs from *A. a. albifrons* in being: (1) of larger size (it is in fact as large as a Greylag). (2) Having larger beak, both in length and depth. (3) Having orbital ring of bright yellow colour (one of the diagnostic characters of the Lesser Whitefronted Goose, *Anser erythropus*). (4) Having darker and browner plumage.

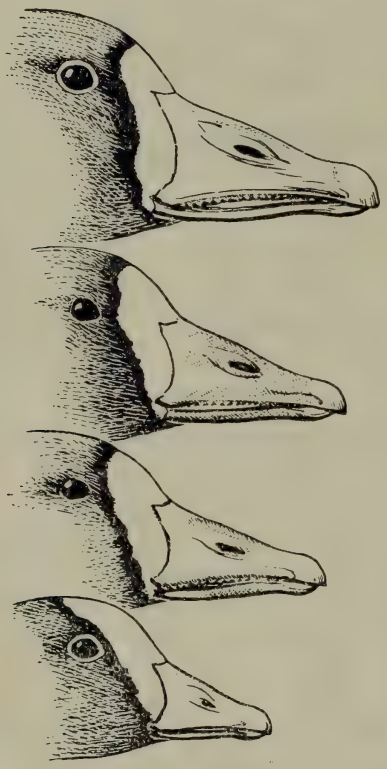
Swarth and Bryant conclude that Hartlaub's type *A. a. gambelli* is the American Tule Goose, the measurements given by Hartlaub being possible for the Tule Goose, but not possible for the common American Whitefronted Goose. They maintain that the race *A. a. gambelli* can be distinguished from *A. a. albifrons* even in the field by larger size, longer neck, and bright orange-yellow orbital ring.

The American *A. a. albifrons* cannot be distinguished, so far as is known, from European or Asiatic *A. a. albifrons*, either by measurement, plumage, bill colour or weight.

Comparison.—*A. a. flavirostris* is smaller than *A. a. gambelli*, and has the bill of different colour and form. *A. a. flavirostris* is distinguishable from *A. a. albifrons* by its darker plumage, bill coloured predominantly

yellow, and narrower white tip to tail. Also the light edges to the mantle feathers are narrower, there is a general absence of rufous or russet on the neck and upper mantle and the bill is longer. There is a tendency for the black belly markings to be heavier and the ground-colour of the belly to be slightly more sooty. Immature *A. a. flavirostris* more often have the belly spotted with dark grey.

Text-figure 2.



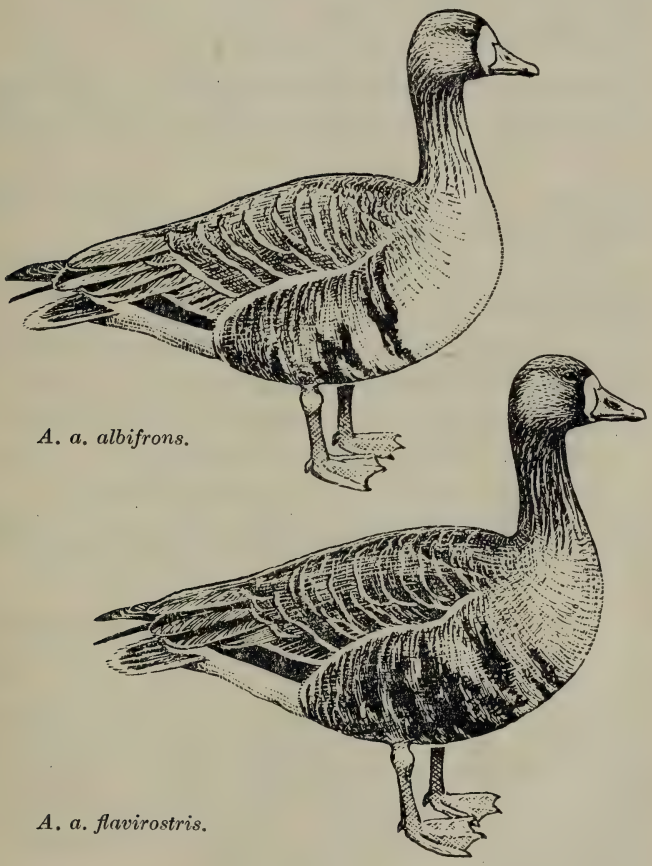
Bills are pink except shaded parts which are yellow. Nails whitish.

Distribution.—A. a. flavirostris appears to be confined to breeding grounds in western Greenland, and winters in the western parts of the British Isles, especially Ireland and western Scotland.

We do not know to what extent it winters on the Atlantic Coast of America, but, in view of the ringed specimen shot on the St. Lawrence River, Quebec, it is possible that such few whitefronts as winter there belong to this race.

In conclusion we should like to take this opportunity of thanking all those who have helped us in the preparation of this paper. We would particularly mention Dr. Finn Salomonson of the Zoological Museum of Copenhagen University who has been most generous with his information regarding the ringed geese. We will not anticipate his publication

Text-figure 3.



A. a. albifrons.

A. a. flavirostris.

of the details of the 1947–48 ringed birds from Greenland, which he expects to publish in July.

It is especially regretted that David Haig Thomas, who played so large a part in the early stages of this research, and who had so great a love for Greenland and her natives, did not live to see its culmination. He was killed in Normandy on D Day, after dropping as a commando parachutist.

The correct affinities of Cisticola aberrans njombe Lynes, Bull. B.O.C., 53, p. 70, 1933, and of Cisticola lais mariae Benson, Bull. B.O.C., 66, p. 16, 1945, nom. nov. for Cisticola lais nyikae Benson, 'Ostrich,' August, 1941, p. 28: Nyika Plateau, Nyasaland.

Mr. C. W. Benson sent the following note :—

I have collected the following specimens, which until recently would all have been regarded as belonging to the species *Cisticola lais* (Finsch & Hartlaub) :—

(*a*) Five males, one female, 9–11 October, 7000–7500 feet, Nyika Plateau, northern Nyasaland.

(*b*) Two males, two females, 9 November, one male, 14 May, 6000 feet, Matipa, Masuku Mts., northern Nyasaland.

(*c*) Two sex undetermined, 8 September, 7000 feet, Isoko, Rungwe district, southern Tanganyika Territory.

Series (*a*) and (*c*) differ from series (*b*) in the same way as does *C. l. mariæ* from *C. l. semifasciata*, see the original description of *C. l. nyikæ*. Thus (*a*) and (*c*) are *C. l. mariæ*, (*b*) *C. l. semifasciata* Reichenow.

But the Masuku Mts. are practically due north of the Nyika Plateau, see 'Ibis', 1940, map facing p. 298, and about 10 miles south of Isoko, the exact site of which is 9° 29′ S., 33° 30′ E.

Thus it is difficult to regard *C. l. mariæ* and *C. l. semifasciata* as belonging to the same species, and there is the following further supporting evidence :—

(*a*) A male of *C. l. semifasciata*, collector's number N5267, which has also been sent to the British Museum, was collected by me on 9 October at 7000 feet on the Nyika Plateau, less than 10 miles west of the series of *C. mariæ*. The intervening country—short grassed downlands—is precisely similar.

(*b*) It was predicated by me, 'Ibis', 1948, p. 68, that further research would show *C. mariæ* to be a distinct species, on account of voice-differences.

Through the kindness of Dr. Austin Roberts, I have had the loan of two of the specimens of *C. mariæ* from the Nyika Plateau on which it was originally differentiated from *C. l. semifasciata*, and likewise two of this latter from the Vipya Plateau. They agree with my more

recent specimens, the two from the Nyika being *C. mariæ*, and the two from the Vipya *C. l. semifasciata*.

Subsequently to writing the foregoing, I have forwarded all these specimens to the British Museum, and Mr. C. W. Mackworth-Praed and Captain C. H. B. Grant have very kindly examined them, together with other specimens previously presented. They find as follows :—

C. mariæ only differs from *C. aberrans njombe* Lynes in being slightly darker. As the distributions of *C. mariæ*, *C. aberrans* and *C. lais* all overlap one another, *C. njombe* cannot be a race of *C. aberrans*, nor can *C. mariæ* be a race of *C. lais*. Therefore *C. njombe* is a distinct species, and *C. mariæ* a race of it, thus :—

Cisticola njombe njombe Lynes. Iringa and Njombe areas, Tanganyika Territory.

Cisticola njombe mariæ Benson. Mbeya, Rungwe, Tukuyu and Isoko areas, Tanganyika Territory ; and Nyika Plateau, Nyasaland.

In northern Nyasaland, *C. lais semifasciata* occurs on all short grassed downlands at 5000–7000 feet ; *C. njombe mariæ* is restricted to similar country not below 7000 feet, and is therefore only found on the Nyika Plateau ; while *C. aberrans nyika* Lynes is restricted to *Brachystegia–Uapaca* woodland, and it only normally occurs at 4500–6000 feet.

On the Racial Status of Migrants Emberiza citrinella Linnaeus from Asia.

Mr. P. A. Clancey sent the following note :—

In ' Ibis ', 1940, pp. 94–95, I stated that one or two migrant Yellow Buntings from Fair Isle in the collection of the Royal Scottish Museum, Edinburgh, were to me inseparable from the race *Emberiza citrinella erythrogenys* Brehm, 1855 : near Sarepta (*vide* ' Vogelfang ', 1855, p. 414). Through the courtesy of Dr. A. C. Stephen, D.Sc., I have recently been able to examine more critically these Fair Isle specimens, and I have compared them with examples of *E. c. erythrogenys* from European Russia, Asia Minor, and Central Asia (Altai). It can now be unequivocally stated that no less than five Fair Isle taken migrants are of this eastern race of the Yellow Bunting, and represent the first recorded occurrences of the form in the British Isles.

The details of the specimens are as follows :—

Female, 22 October, 1906. Fair Isle. Royal Scottish Mus. Reg. No. 1906.156.27.

Female, 23 October, 1906. Fair Isle. Royal Scottish Mus. Reg. No. 1906.159.9.

Male, 21 October, 1907. Fair Isle. Royal Scottish Mus. Reg. No. 1907.200.7.

Female, 27 March, 1907. Fair Isle. Royal Scottish Mus. Reg. No. 1908.25.6.

Male, 21 March, 1911. Fair Isle. Royal Scottish Mus. Reg. No. 1912.38.6.

E. c. erythrogenys is separable from *E. c. citrinella* Linnæus, 1758 : Sweden, on account of the greyer and paler upper-parts and the generally lighter and brighter coloration of the fresh autumn plumage. In the spring, birds still carry many of the pale edges to the feathers of the upper parts which enable ready determination of the race at this season. There is no difference in size, though Altai birds average a little larger.

The distribution of the race is as follows :—

Finland, Estonia ?, Latvia ?, Lithuania, East Prussia, eastern Poland, Rumania, Bulgaria, Thrace, European Russia from about 65° N., south to the Caucasus, Ural and western parts of Siberia from about 64° N. south to the steppes of the Governments of Tomsk and Semipalatinsk. Limit of range in east R. Yenisei and Altai (Hartert, 1904), " Nijnia Tunguzka and the high Viliui " (Dementiev, 1935). Occasionally in Turkestan, Persia, and Asia Minor.

The race *Emberiza citrinella somowi* Awerin, 1912 : Kharkov, cannot be differentiated from topotypical *E. c. erythrogenys*, and has already been placed in the synonomy by Dementiev (*vide* Syst. Av. Rossicarum, 1 (1935), p. 122) and recently by Meinertzhagen, Bull. B. O. C., 67 (1947), p. 93). Meinertzhagen, *loc. cit.*, also considers *Emberiza citrinella romaniensis* Gengler, 1911 : Rumania, to be a synonym of *E. c. erythrogenys*, a view expressed years ago by Hartert, Vög. pal. Fauna, 3, Heft 17 (1921), p. 2072. I have adopted this opinion in my distribution of *E. c. erythrogenys*.

On the Racial Status of Migrant Turdus viscivorus Linnaeus from Scottish Islands.

Mr. P. A. Clancey sent the following note :—

I have recently examined in the collection of the Royal Scottish Museum, Edinburgh, five migrant examples of *Turdus viscivorus* Linnæus, from Scottish islands which are clearly not assignable to the nominate race on account of their altogether greyer upper parts and paler under surfaces.

They are, in my opinion, referable to the eastern European form, *Turdus viscivorus jubilæus* Lucanus and Zedlitz, 1917 : Slonim (*vide* J. f. Orn. 1917, p. 304). This race has not been recorded before in the British Isles. The data of the specimens are as follows :—

Male, January, 1907. Skerryvore Lighthouse. Royal Scottish Mus. Reg. No. 1907.19.

Male, 5 March, 1907. Fair Isle. Royal Scottish Mus. Reg. No. 1907.86.7.

Female, 17 October, 1907. Fair Isle. Royal Scottish Mus. Reg. No. 1907.200.9.

Male, 25 March, 1911. Fair Isle. Royal Scottish Mus. Reg. No. 1912.38.55.

Female, 9 October, 1913. Colonsay. Royal Scottish Mus. Reg. No. 1916.2.16.

Hartert, Vög. pal. Fauna, 3, Heft 17 (1921), p. 2157, treats *T. v. jubilæus* as a synonym of *Turdus viscivorus reiseri* Schiebel, 1911, a name given to wintering birds obtained in Corsica. Dementiev, Syst. Av. Rossicarum, 1 (1935), p. 239, who does not recognize an eastern European race, does not list *T. v. reiseri* in the synonymy of *T. v. viscivorus* Linnæus, 1758 : Essex, England, but only *T. v. jubilæus*, *T. v. balticus* Zarudny, 1918, and *T. v. loudoni* Zarudny, 1912 (nom. nov. for *T. v. zarudnyi* Loudon, 1912). The use of the name *T. v. reiseri* for the paler and greyer eastern European populations seems open to criticism, and I prefer to use *T. v. jubilæus* Lucanus and Zedlitz for this perfectly valid race.

Details as to the precise range of *T. v. jubilæus*, which are incomplete, are as follows :—

Sweden ? Finland, Estonia, Latvia, Lithuania, East Prussia, Poland, Rumania (Bessarabia), European Russia from Kola peninsula, Archangel, and 63° N. in Petchora, south to the Crimea and the Caucasus, Ural, and presumably to parts of western Siberia, but data lacking.

Notice.

The next Meeting of the Club will take place on 21 April, 1948, at the Rembrandt Hotel, Thurloe Place, S.W. 7. Dinner at 6.30 P.M.

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

Volume 68.

No. 7.

The four-hundred-and-seventy-sixth Meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, S.W.7, on Wednesday, 21 April, 1948, with dinner at 6.30 P.M.

Chairman : Dr. J. M. HARRISON.

Members present :—Miss C. M. ACLAND ; Miss P. BARCLAY-SMITH ; C. T. DALGETY ; W. E. GLEGG (*Hon. Secretary*) ; Miss C. E. GODMAN ; Miss E. M. GODMAN (*Vice-Chairman*) ; Capt. C. H. B. GRANT (*Editor*) ; Dr. J. G. HARRISON ; Miss E. P. LEACH (*Hon. Treasurer*) ; C. W. MACKWORTH-PRAED ; G. M. MATHEWS ; E. R. PARRINDER ; Lt.-Col. W. A. PAYN ; A. A. PRESTWICH ; Major G. H. R. PYE-SMITH ; R. A. W. REYNOLDS ; Miss G. M. RHODES ; D. SETH-SMITH ; Lt.-Cmdr. C. P. STAPLES ; Dr. A. LANDSBOROUGH THOMSON ; B. W. TUCKER ; A. WILLIAMS ; C. DE WORMS ; Col. O. E. WYNNE.

Guests :—Miss E. BEVINGTON ; R. T. BRETHERTON ; Dr. E. HINDLE ; Miss C. G. P. JOHNSTON ; G. B. MURRAY ; A. B. L. PEAKE ; Mrs. A. L. THOMSON.

Members, 25 ; Guests, 7 ; Total, 32.

A new Race of Coucal from Nyasaland.

Mr. C. W. BENSON sent the following description and the type for exhibition :—

CENTROPUS MONACHUS SONGWEENSIS, new race.

Description.—Similar in size to *Centropus monachus cupreicaudus* Reichenow, with the same large bill, but differs from that race in having the mantle and innermost secondaries usually darker, less tawny ; the

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upper tail-coverts with less barring and absent in some specimens; tail darker inclining to a deeper greenish-copper. From *Centropus monachus fischeri* Reichenow, it differs in its appreciably larger bill and darker coloration of the mantle, inner secondaries and tail; but inclines towards that race in the less barring on the upper tail-coverts.

Distribution.—Lower reaches of Songwe River, Tanganyika Territory—Nyasaland boundary, at 1600 feet.

Type.—In the British Museum. Male adult. Songwe River, Tanganyika Territory—Nyasaland boundary, 9 July 1947; collected by C. W. Benson. Collector's number N.5140. Brit. Mus. Reg. No. 1947.95.5.

Measurements of type.—Wing 211; exposed part of culmen 38; tarsus 54 mm. Tail in moult.

Remarks.—Five males and two females were obtained, and all show quite well the characters given above. One male is not adult. All are more or less in moult, and were taken in July, October and November. The measurements of the other six specimens are :—wings, males 196, 197, 202, 210; exposed part of culmen 33, 36, 36, 36 mm.; wings, females 216, 220; exposed part of culmen 36, 38 mm. This whole series is in the British Museum. Habitat dense reed-beds. I am indebted to Captain C. H. B. Grant and Mr. C. W. Mackworth-Praed for drawing my attention to this new race.

The Bird-Ringing Station on Oeland.

Mr. B. W. Tucker gave a very interesting talk on the new Bird-Ringing Station on Oeland, established by the Swedish Ornithological Society in 1946.

A Specimen of an apparently Hybrid Goose.

Mr. C. T. Dalgety exhibited photographs of a goose taken in Dumfriesshire which appeared to be a hybrid between a Barnacle Goose, *Branta leucopsis* (Bechstein) and a Pink-footed Goose, *Anser brachyrhynchus* Baillon.

A specimen of the Little Owl from Tangier, Morocco.

Col. W. A. Payn exhibited a specimen of the Little Owl, *Athene noctua* (Scopoli), from Tangier, and with it for comparison specimens of *A. n. vidalii* Brehm, from France, and *A. n. glaux* (Savigny) from Morocco. He made the following remarks :—

As is generally known, all western European races of *Athene noctua* are grey, both above and below, while the North African races, *A. n. glaux*

and *A. n. saharæ* (Kleinschmidt) are of a reddish sandy colour. This specimen from Tangier is distinctly intermediate in colour between the European and North African races. Unfortunately only this one specimen was obtained from Tangier, and I could not find any from this place in the British Museum.

Of course it may be a solitary instance of a bird from Southern Spain crossing the Straits of Gibraltar, or it may be that birds from southern Spain are in the habit of crossing the straits, and interbreeding with the North African races, to such an extent as to form a local race.

Dr. J. Harrison pointed out that, whereas the tail of the European bird exhibited was barred, the tails of both the North African bird and the bird from Tangier tended to be spotted ; therefore the Tangier bird may be only an unusually dark example of *A. n. glaux*.

New Name for the Cape Paradise Flycatcher.

Dr. Austin Roberts sent the following :—

Tchitrea granti, new name

for *Tchitrea suahelica smithi* Roberts, Ann. Trans. Mus. 18, p. 304, 1936, not *Tchitrea smithii* (Fraser), Hartlaub, Orn. W. Afr. p. 91, no. 279, 1857.

Note.—I am indebted to Captain C. H. B. Grant for settling the identity of *Muscipeta perspicillata* Stephens, 1826, which is earlier than *Muscipeta perspicillata* Swainson, 1837, and was based upon Le Vaillant's Ois. d'Afriq., pl. 152, fig. 1, of birds said to have been collected on Gamtoos River, South Africa. I was dubious about its standing and therefore discontinued the name of *Tchitrea smithi* when I noticed it was preoccupied, and continued to use *T. perspicillata*. Captain Grant informs me that *Muscipeta perspicillata* Stephens is a synonym of *Rhipidura javanica* of Sparrman, and Le Vaillant could not have collected it in South Africa.

A new Canary from the Belgian Congo.

Mr. C. M. N. White sent the following description :—

Serinus atrogularis kasaicus, new race.

Description.—Similar to *S. a. lwenarum* White, but darker below; belly and flanks more rufous, less whitish ; breast darker ; less black on throat ; white mystacal streak nearly obsolete.

Distribution.—Kasai River drainage of the Belgian Congo.

Type.—In my collection. Male adult collected at Luluabourg, Belgian Congo on 2 January 1939.

Remarks.—Three examples compared with long series of *S. a. lwenarum* from north-west Northern Rhodesia.

A new Race of Rock-Sparrow.

Mr. Andrew Keve sent the following :—

Petronia petronia härmsi, new race.

Description.—Differs from *P. p. intermedia* Hartert of Central Asia by the smaller measurements. The colours of the back are washed with tawny and has none of the blackish-brown coloration of *P. p. intermedia*. The white spots of the inner tail-feathers average larger and are the same as in the Tian-Shan birds. The underparts are also whiter ; the underside of the tail-feathers are uniformly coloured ; the yellow spot on the chest is small or almost absent.

Type and cotype.—In Museo Nationali Hungarico, Budapest ; male, female, Tebbes, 11 April 1900, no. 2850/279 *a* et *b* ; coll. Mih. Harms.

Measurements.—Wing : male 92, 92, 94, 98 ; female, 93, 93 mm.

Remarks.—This new race is nearest to *P. p. puteicola* Festa, of Palestine, but it is smaller. The brown streaks on the underside are in the Persian birds brownish.

The Caucasian *P. p. exigua* Hellmayr, is much blacker, even more so than the birds from Tian-Shan.

I have named this new race after M. Harms, who collected the specimens.

New Races of the Brown Owl, Hedge-Sparrow and a new Species of Attila ; also a new Genus of Cotingidæ.

Mr. Andrzej Dunajewski sent the following :—

Strix aluco volhyniæ, new race.

Description.—In all three phases of colour, *i.e.* grey, rust, and rust-brown, much darker than the nominate race, even somewhat darker than the average dark specimens of the Caucasian race *S. a. obscurata* Stegmann. The difference is very striking on the upper side, on the underside only noticeable in certain specimens. Some few grey specimens of *S. a. aluco* Linnæus, resemble specimens of *S. a. volhyniæ*, but are always somewhat lighter. Size similar to that of *Strix aluco*.

Type.—In the Polish Zoological Museum. Female, from Dolsk, Volhynia ; 31 May 1935, grey phase. Cotype from Peturzyca, South Volhynia, District Sokal, 20 May 1939, reddish phase.

Measurements.—Wings : male 277, females 279, type 286, 291, 292, albino 267, cotype 281 mm.

Remarks.—Other specimens examined : two females, one unsexed, from West and South-Volhynia, one female from Polesia, one male from West Podelia. Among them a pure white albino.

PRUNELLA MODULARIS ENIGMATICA, new race.

Description.—Upper side less brownish than in the Caucasian race *P. m. obscura* Hablizl, the crown entirely lacking in brown tones, so that the colour resembles that of the nominate race. Breast much lighter than in all other races, the white being wide-spread, the streaking of the sides dark and well defined. Superciliary stripe light ash-grey, and almost as well marked as in *P. m. obscura.*

Type.—In Polish Museum of Zoology. Male, Yalta, Crimea, 20 February 1899.

Measurements of type.—Wings : males 68, 70 ; females 65, 67 mm.

Remarks.—Also examined one male and two females from the same locality, shot in February, March and November, and therefore, like the type, not certain breeding birds.

AKLETOS, new genus.

Description.—Similar to *Attila* Lesson, but tarsus longer and beak smaller. Bristles of the gape undeveloped. Beak about as long as the head ; its shape is reminiscent of those of *Attila* and *Laniocera* Lesson.

The outer toe is united to the middle one over a greater distance than in *Attila*, but not quite to the end of the second phalange. Tarsus pycnaspidean, longer than the culmen and the clawed middle toe, and longer than one-third of the wing length. Tail short and slightly rounded.

The fifth and sixth primaries are the longest, the tenth between the second and third.

Genotype :—

AKLETOS PERUVIANUS, new species.

Description.—Head black. Feathers of throat and upper breast black, the latter tipped with rust-red ; the whole plumage is rust-red inclining to a lighter, more yellowish rusty on the underside ; darkest on the wings, rump and tail-feathers ; inner webs of the primaries blackish bordered with rust. The colouring as a whole, with the exception of the head, is not unlike that of the red specimens of *Attila spadicea* (Gmelin), although darker and more reddish on the underside, tail and wings, also more reddish on the upper side.

Type.—In the Polish Museum of Zoology. Male, No. 1458, Cumaria on the Ucayali, Peru, 16 April 1934.

Measurements of type.—Wing 35, tail 62 mm.

Remarks on Passer montanus (Linnæus) in the Western Palæarctic Region with special reference to Passer catellatus Kleinschmidt, 1935 : England.

Mr. P. A. Clancey sent the following communication :—

A critical analysis of recently assembled material of western Palæarctic *Passer montanus* (Linnæus) has revealed distinctive populations in the British Isles which I now consider to warrant separation from the nominate race. A careful fixation by designation of neotype of the type-locality of *P. m. montanus* and the accurate delineation of the characters of this race are clearly necessitated by the data now available.

The *P. montanus* populations of the British Isles represent the termination of a gradual colour cline, being generally redder and more strongly striated on the upper parts than those of central and south-eastern Continental regions, birds from Denmark, western Germany, Holland, Belgium, and northern France being intermediate in coloration between the two extremes. Running parallel to this colour cline is a noticeable diminution in size, the measurements given opposite showing this tendency to an admirable degree, but it should be recognized that Italian birds measured—important from the taxonomic viewpoint—are rather apt to disrupt the otherwise orderly sequence of decreasing east–west measurements. They are in fact slightly divergent, not being typical of central and south-eastern Continental *P. montanus* which average larger and are brighter, less dull, in colour. The measurements of the series examined are given in the table on p. 133.

Hartert, Vög. pal. Fauna, 3, Heft 17 (1921), p. 2070, gives wing measurements of *P. m. montanus* as males 66–73, females 62–72 mm. Tail (*op. cit.*, 1, Heft 2 (1904), p. 160) about 55 mm. Witherby, 'Handbook of British Birds', 1 (1938), p. 162, gives wings of males 65–73 mm., females as in males, tail 51–54 mm. Hartert's measurements and those of Witherby are typical of British *P. montanus* and also show on comparison with the size details of central and south-eastern Continental specimens given in the table, the diminution in size inherent in western European populations. Closely similar measurements to those supplied for British birds are given for Dutch specimens by Hens and van Marle, 'De Nederlandsche Vögels,' 1 (1937), p. 121, viz., 9 males 66–75, 12 females 65–73 mm. from a series collected in all parts of the

Locality.	Sex.	Wing.	Mean.	Tail.	Mean.
Balkans.	Males.	75·5, 73·5, 72, 71	73·0	58, 55·5, 53·5, 52	54·7 mm.
	Female.	70	70·0	53	53·0 mm.
Italy.	Males.	73, 72·5, 72 (3), 71·5 (2), 71, 70 (3)	71·4	57 (2), 55 (2), 54·5, 54 (3), 53 (2) 52·5	54·4 mm.
	Females.	73, 72 (2), 70, 69·5, 69 (2), 68·5, 68 (3), 67·5, 67 (2)	69·1	59, 57, 56, 55 (2), 53·5, 53, 52 (2), 51 (3), 50, 49·5	53·2 mm.
Corsica.	Male.	67	67·0	50	50·0 mm.
Switzerland.	Males.	75·5 (2), 74·5, 74, 73 (2), 72·5, 71	73·6	57·5 (2), 57 (2), 56 (2), 55·5, 55	56·4 mm.
	Females.	73, 72 (3), 70 (2), 69·5, 69	70·9	56, 55, 54·5, 54, 54, 52 (3)	53·5 mm.
Denmark, W. Germany, Holland, Belgium, N. France.	Males.	73, 72·5, 72 (6), 71·5 (2), 71 (5), 70·5, 70 (3), 69 (3), 68 (2)	70·8	58 (3), 57 (2), 56 (4), 55·5, 55 (2), 54 (6), 53·5 (3), 53 (2), 50·5	54·9 mm.
	Females.	75, 72 (2), 71 (4), 69 (5), 68 (6), 67 (3), 66 (2)	69·0	58 (2), 57 (3), 55 (3), 54·5, 54 (4), 53 (2), 52·5, 52 (3), 51·5, 51 (3)	53·9 mm.
S. and S.E. England.	Males.	73, 72·5 (2), 72 (2), 71·5, 71 (2), 70·5, 70 (4), 69·5 (3), 69 (2), 68·5, 68 (2), 67·5 (2), 67	69·9	56, 55·5 (2), 55 (2), 54 (5), 53·5 (4), 53 (3), 52·5, 52 (3), 51·5, 51, 50	53·3 mm.
	Females.	70 (3), 69·5 (3), 69 (4), 68·5, 68 (5), 67·5 (2), 65	68·0	55·5, 55 (2), 54·5 (3), 54 (2), 53·5, 53 (4), 52 (2), 51·5, 51 (2), 49	53·1 mm.
N. and N.W. England.	Males.	72·5, 70 (2), 68 (2)	69·7	54 (2), 53, 52, 51	52·8 mm.
	Females.	69, 68·5, 68, 67·5 (3), 67, 66·5 (2)	67·5	53·5, 53 (3), 51, 50, 49·5, 49 (2)	51·2 mm.

Netherlands. Dr. K. H. Voous, Jr., Zoölogisch Museum, Amsterdam, has kindly furnished details of a series from western provinces only (Noord Holland, Zuid Holland) as follows :—6 males 68–71, 4 females 68–69 mm. Dr. P. A. Hens has kindly examined the series in the Leiden Museum in conjunction with Dr. G. C. A. Junge and has measured the specimens on my behalf—7 males 70–72, 13 females 66–72 mm. These two specialists confirm my opinion that Dutch birds are rather darker headed and more prominently striated on the mantles than Italian *P. m. montanus*. I consider them to be intermediate as already stated above.

From Scandinavian countries, eastern Germany, Poland, East Prussia, Baltic States and the U.S.S.R. I have examined only the most fragmentary material, but it should here be noted that Dementiev, ' Systema Avium Rossicarum,' 1 (1935), pp. 119–120, considers the populations of much of European Russia to be referable to the nominate race. Detailed statistics as to colour and size trends in birds from these countries are urgently required. Available measurements of *Passer montanus volgensis* Ognew, 1913 : Delta of R. Volga, suggest a tendency to smallness in south and south-eastern Russian birds, and this view is strengthened by details of wing measurements of *Passer montanus transcaucasicus* Buturlin, 1906 ; Transcaucasia, given by Hartert, *op. cit.*, 3, Heft 17 (1921), p. 1070, as 66·5–71 mm., apparently for both sexes.

To summarize, British *P. montanus* populations are found to be the termini of East–West colour and diminishing-size clines, those of western Continental countries are ascertained as intermediate in coloration and size. Italian birds, topotypical of *P. m. montanus*, are noted as being slightly divergent. From northern and eastern Europe colour and size details are inconclusive and do not permit of a pronouncement on the precise racial status of the indigenous populations at the present juncture.

Hartert's fixation of the type-locality of *P. m. montanus* (*op. cit.*, 1, Heft 2 (1904), p. 160) as northern Italy must stand, being based on Linnaeus's first reference, namely, to that of Aldrovandi. It would have been more advantageous could the type-locality have been fixed further east, in the northern Balkans. In order to resolve matters I now intend to redescribe the Italian bird and fix an exact type-locality.

Passer montanus montanus (Linnæus).

Fringilla montana Linnæus, ' Systema Naturæ,' ed. 10, 1, 1758, p. 183.

Diagnosis based on neotype.—Upper parts. Forehead, crown and nape dull purple-brown ; sides of neck white ; mantle light rufous boldly

streaked blackish brown, rufous portions of feathers with greyish edges ; rump and upper tail-coverts pale greyish brown. Under-parts : Gular region, areas at base of bill, lores, and narrow stripes under eyes sooty black ; ear-coverts upper half white, lower half sooty black ; malar regions white connecting up with white sides of neck ; rest of under-parts dull white tinged buffy ; under tail-coverts whitish, feather centres pale brown ; flanks grey-brown. Wings dark brown, feathers fringed light reddish brown ; secondary and median coverts with white tips ; lesser coverts light chestnut. Tail dark greyish brown, feathers edged dull white. Bill blackish slate, base dull yellow. Legs and feet straw-coloured.

Measurements.—Males : wing 70–73, culmen from base 13–14, tarsus 17–18, tail 52·5–57 mm. Females : wing 67–73, culmen from base 12·5–14, tarsus 17–18·5, tail 49·5–59 mm. (twenty-five measured).

Neotype.—Male, adult. In my collection. Bagnacavallo, Ravenna Province, Emilia, northern Italy. 21 February 1945.

Measurements of the neotype.—Wing 70, culmen from base 13·5, tarsus 17·5, tail 52·5 mm.

The British populations, as has been shown above, are separable on both colour and size characters from the nominate form, and must now be elevated to full racial status. Kleinschmidt, ' Falco-Skizzen,' no. 2 (1935), has introduced the name *Passer catellatus* for the English race, and this should be used in preference to *Passer arboreus* Forster, Syn. Cat. Brit. Birds (1817), p. 52, which, though based on Bewick, Hist. Brit. Birds, p. 179, is clearly a substitute name for *Fringilla montana* Linnæus, 1758 : northern Italy. Other names to be considered are :—

Loxia scandens Hermann, 1783 : France, which is available for French birds. The majority of French birds are close to true *P. m. montanus*, though northern populations do show a tendency towards British birds.

Loxia hamburgia Gmelin, 1789 : Hamburg, stands for the German populations. Western German specimens are rather darker on the upper parts than topotypical *P. m. montanus*, but they are never so rich as the British race and they are also less small.

Pyrgita septentrionalis Brehm, 1831 : Denmark. The single Danish example examined (Sjœlland, Denmark, 10 February 1946. J. M. Harrison Coll.) cannot be separated from German specimens. These names are here placed as synonyms of *P. m. montanus* (Linnæus), 1758 : northern Italy.

The birds of Denmark, western Germany, Holland, Belgium and northern France are best covered by the combination *P. m. montanus* ≷ *P. m. catellatus.*

Kleinschmidt's description in 'Falco-Skizzen,' no. 2, 1935, issued as a supplement to Falco, and 'Berajah,' Zoogr. Infinita, pp. 1–34, pl. 8, is quite inadequate. Witherby, 'Handbook of British Birds,' 5, 1941, p. 260, did not consider the name to be a racial one and dismissed Kleinschmidt's separation of the British race as "evidently abnormal variation", but an examination of the original description does not show such a view to be maintainable and, even though the introduction of *P. catellatus* leaves much to be desired, the characters of the British race are nevertheless defined therein. The original description is as follows :—

". . . . Es war mir an zwei englischen Feldsperlingen in meiner Sammlung aufgefallen, dass sie besonders dunkle Zeichnung an den Kopf. und Halsseiten besassen. Deshalb liess ich mir zwei weitere Stücke von Rosenberg zur Nachprüfung kommen. Ich wasche Köpfe und Hälse auf der linken Seite mit Benzin und streiche kräftig mit einem weissen Tuch darüber. Das Tuch färbt sich schwarz, aber dunkle Federspitzen bleiben, bei dem Männchen kaum stärker als bei normalen deutschen Vögeln, bei dem Weibchen auffälliger. Ich nenne nun das dunkelste englische Stück meiner Sammlung

Passer catellatus.

Ob diese Färbung in England so häufig ist, dass man alle englischen Feldsperlinge als Form *catellatus* bezeichnen kann, vermag ich nicht zu ermitteln. Gesetzt, es sei nicht der Fall, dann kann ich dunkelhalsige Stücke von Mitteldeutschland und Russland ebenso wie die von England als aberratio *catellata* bezeichnen. Gesetzt, es sei der Fall, so müssen die kontinentalen, an *catellatus* anklingenden, aber etwas reiner gefärbten Stücke aberratio *catelloides* heissen . . . . "

The British race must, therefore, be known as

Passer montanus catellatus Kleinschmidt.

Passer catellatus Kleinschmidt, 'Falco-Skizzen,' no. 2 (1935).

Adjusted diagnosis.—Separable from *Passer montanus montanus* (Linnæus) on account of the darker and richer purple-brown of the forehead, crown and nape ; mantle redder and with deeper black striæ ; gular patch deeper black ; ventral surfaces whiter and less washed with buffy ; flanks darker ; wings darker and richer, especially the lesser-coverts ("shoulder" patch) which are darker, less light chestnut. A smaller race.

Measurements.—Males : wing 67–73, culmen from base 13–14, tarsus 16·5–18, tail 50–56 mm. Females : wing 65–70, culmen from base 13–14, tarsus 17–18, tail 49–55·5 mm. (fifty-seven measured).

Distribution.—England and Wales ; Scotland and Isles where extremely local except in parts of the eastern mainland. Ireland ? Zone of contact with *P. m. montanus* in western Continental countries.

Type-locality.—Sussex, England. Type : male, December, 1883, Sussex, England. In collection Mus. Alexander Koenig, Bonn. Listed as no. 185 in Kleinschmidt, ' Katalog meiner Ornithologischen Sammlung ', 1943, p. 7.

Remarks.—British birds are not strictly homogeneous, those from the south and south-eastern parts of England being less richly coloured than examples from other areas, but they are not divisible into distinct racial units and are here considered to be of one form.

A female example from Cheshire taken on 2 January 1938, and now in the collection of the Yorkshire Museum, has the pale colouring of the Italian (typical) bird on the upper parts, but has the darker wings and tail of *P. m. catellatus*. The wing (66·5 mm.) is smaller than any of the many topotypical *P. m. montanus* measured. It is clearly an aberrant specimen. A somewhat similar aberration is an unsexed example taken at Bolton Percy, Yorkshire, in March 1944, and also in the collection of the Yorkshire Museum. These specimens stand out from the vast majority of British birds from all districts and, in my opinion, in no way vitiate the constancy of the criteria defined above for the British race.

One or two specimens in the Payn collection taken at Blakeney, Norfolk, in March 1934, are not unlike *P. m. montanus* and may well be of Continental origin. Lieut.-Col. W. A. Payn informs me that judging by the large numbers involved and the general behaviour of the birds they were clearly not native to the locality. The question of admitting the nominate race to the official British List requires further study, but this race should be expected as it has an extensive distribution in continental Europe, the zone of contact with *P. m. catellatus* being comparatively narrow.

For the loan of materials and assistance in many directions I am deeply indebted to the following workers :—Dr. J. M. Harrison, Dr. P. A. Hens, Dr. O. Kleinschmidt, Lieut.-Col. W. A. Payn, R. Wagstaffe, Dr. K. H. Voous, Jr.

Chloris chloris (Linnæus) in the British Isles.

Mr. P. A. Clancey sent the following communication :—

In ' Ibis ', 1940, pp. 92–93, I pointed out the characteristics of the northern Scottish *Chloris chloris* (Linnæus) and described (p. 92) the south-western populations of Scotland as a new race, *Chloris chloris*

harrisoni. Type : male, adult, 3 November, 1937, Thorntonhall, Lanarkshire, Scotland. Witherby, ' Handbook of British Birds,' 5 (1941), p. 257, reviewed *Ch. ch. harrisoni* on two males from Argyllshire in the Meinertzhagen collection (see note Bull. B. O. C. 63 (1943), p. 66). The criteria of the race were further discussed by me in ' Ibis ', 1943, pp. 87–88. In Bull. B. O. C. 63 (1943), pp. 65–66, I separated (p. 65) a further British race, namely, *Chloris chloris restricta*. Type : male, first-winter, Amesbury, Wiltshire, southern England, and in Bull. B. O. C. 64 (1943), pp. 27–31, I attempted to summarize our knowledge of the western Palæarctic races. A short note in ' Ibis ', 1946, p. 519, extended the range of *Ch. ch. harrisoni* further to the east. Meinertzhagen, Bull. B. O. C. 68 (1947), pp. 21–22, brought forward new information, and suggested a classification of western European *Ch. chloris*. The now copious literature on the subject of British races appears on careful perusal disjointed and inconclusive, and I have recently re-examined my large series of British and Continental birds and reviewed the literature in an endeavour to prepare a more satisfactory and final arrangement of the races.

Details of the characters and ranges of *Ch. ch. harrisoni* and *Ch. ch. restricta* as known at that date (December 1943) were fully summarized in my paper in Bull. B. O. C. 64 (1943), p. 29, and in the case of *Ch. ch. harrisoni* little further remains to be said. The range of this form has been slightly extended (Clancey, 1946), and its validity upheld by Meinertzhagen, *loc. cit.* The conception of a highly localized race of *Ch. chloris* from the Salisbury Plain area of Wiltshire, named as *Ch. ch. restricta*, is quite untenable in the light of new material from other parts of England. Notes prepared for the guidance of the B. O. U. List Committee early in 1947 (not published) showed that by that date I was dubious about the correctness of my earlier views on the localized nature of the distribution of *Ch. ch. restricta*. This change of opinion originates from an examination of a small series of fresh autumn males collected in the Lancashire–Yorkshire border country in the autumn of 1946. These birds were found to agree perfectly with *Ch. ch. restricta* in every way, and since then I have examined a further and more extensive series of males in fresh dress collected near Burnley, Lancashire, in the autumn of 1947, in addition to new material from other parts of England as well as Ireland. Racially these were also found to correspond to the characters enumerated in the original diagnosis of *Ch. ch. restricta*, which should now be considered to be the " British " race of the species. Meinertzhagen's remarks, *loc. cit.*, on English and Irish birds in the main confirm the race, but he has suggested (p. 22) that the populations in-

habiting eastern Scotland, England (except Cornwall), and Ireland, be covered by the combination *Ch. ch. chloris* ≷ *Ch. ch. harrisoni*. Such an arrangement is, in my opinion, highly contentious, and offers the systematist not the least satisfaction in the face of the evidence before him. It can truly be said to obscure the presence of the essentially intermediate populations of northern Scotland and south-eastern England, which must be given suitable expression in any racial classification of the species in the western parts of Europe.

Meinertzhagen, *loc. cit.*, expresses doubt as to the advisability of accepting *Ch. ch. restricta* on the grounds that it is too inconstant and a pure intermediate, as well as having a distribution difficult to define. In the light of what was published hitherto on the question of the distribution of *Ch. ch. restricta*, such views as are expressed by Meinertzhagen are fully justified, but they can now be answered. Inconstancy—*Ch. chloris* is naturally variable, but broadly speaking, the variations are referable to two distinct colour phases, as already outlined in my paper (*vide* Bull. B. O. C. 64 (1943), p. 31). Whether we attribute these variations to dimorphism or "strict individual variation" appears to be a matter of personal judgment. What is important to remember is that unless the comparative materials are carefully arranged only confusion can result. To quote my 1943 paper in support of this statement :—"When effecting a comparison between races of *Chloris* care must be taken to ensure that skins of one series are compared only with their chromatic counterparts in the other series". In working on *Ch. chloris* races only fresh autumn specimens should be used. There is a noticeable intensification of the colour in the spring—presumably as the result of some little understood chemical change in the feather pigment, and most certainly not due wholely to abrasion. This colour intensification obscures the true nature of the racial criteria. Furthermore, allowance must be made for the various races being found together in the same area during the non-breeding season.

Working from the large materials of *Ch. ch. restricta* now available to me I should say that it is no more variable than any other race. It occupies the largest section of the species' British distribution (see below), and has a well-pronounced zone of contact (hybrid zone) with *Ch. ch. chloris* in south-eastern England and near western Continental countries, as well as with *Ch. ch. harrisoni* in the Scotland–England border counties and parts of south-eastern Scotland. Birds taken within the range of *Ch. ch. restricta* and found to resemble *Ch. ch. chloris* may be either genuine migrants of north European origin or stragglers from the zone of contact. The argument as to the intermediate status of *Ch. ch. restricta* cannot be

maintained; its distribution is too extensive and within the newly defined limits of range there are no known divergent trends, and the distribution of the true intermediate populations is now accurately known. *Ch. ch. restricta* should, therefore, be accepted as the " British " race, and the birds of south-eastern England covered by the combination *Ch. ch. restricta* ≷ *Ch. ch. chloris*.

Meinertzhagen's Cornish birds are of considerable significance, and the finding of a British population related to *Ch. ch. aurantiiventris* is a discovery of the greatest importance. In any future evaluation of the racial status of the Cornish population geographical considerations should be permitted to weigh heavily in favour of the introduction of a new name. I have not examined sufficiently closely Meinertzhagen's series of Cornish birds to enable me to pass a reliable opinion here as to their separability from topotypical *Ch. ch. aurantiiventris*. The northern Scottish *Ch. chloris* is also in need of further critical study. Superficially it is an intermediate between *Ch. ch. chloris* and *Ch. ch. harrisoni*, male in autumn near *Ch. ch. restricta* on the upper parts, but with the yellow ventral " patch " of *Ch. ch. chloris*. These differences are highly constant, and it should not be considered in the same sense as the essentially mixed populations of south-eastern England.

I now recognize the following divisions of British *Ch. chloris* (Linnæus):—

1. Chloris chloris restricta ≷ Chloris chloris chloris.
Intermediate populations.

Distribution.—South-eastern England (Norfolk, Suffolk, Essex, etc.). Ranging to western Continental countries

2 Chloris chloris restricta Clancey, 1943: Amesbury, Wiltshire, southern England

Male, autumn Nearest *Ch. ch. chloris*, but upper parts colder, more earthen, in tone. Rump greener. Whole of underside greener, less yellow-green. Ventral surfaces seldom with much yellow. Female, autumn. Rather browner on upper parts than *Ch. ch. chloris*.

Distribution.—England (except for Cornwall, and south-eastern and Border counties), Wales, Ireland.

3. Chloris chloris harrisoni ≷ Chloris chloris restricta.
Intermediate populations.

Distribution.—Border counties of Scotland and England and parts of south-eastern Scotland.

4. Chloris chloris harrisoni Clancey, 1940 : Thorntonhall, Lanarkshire, Scotland.

Male, autumn. Upper parts much darker than in *Ch. ch. restricta*. Below closely similar, but rather darker. Female, autumn. Considerably darker above than in *Ch. ch. restricta*.

Distribution.—South-western and south-central Scotland.

5. Chloris chloris, new race ?

A constant intermediate between *Ch. ch. chloris* and *Ch. ch. harrisoni*. Male, autumn. Near to *Ch. ch. restricta* but with well-marked yellow ventral " patch."

Distribution.—Scotland north of the Grampian massif. (*Note.*—The zone of contact with *Ch. ch. harrisoni* is too narrow to warrant separate mention.)

6. Chloris chloris near aurantiiventris (Cabanis), 1850 : south France.

Male, autumn. Much brighter above than *Ch. ch. chloris*. Under-parts more golden, especially the ventral surfaces. Female, autumn. Closely similar to *Ch. ch. chloris*.

Distribution.—Cornwall, England. (*Note.*—Location of zone of contact with *Ch. ch. restricta* not at present known.)

7. Chloris chloris chloris (Linnæus), 1758 : Sweden.

Male, autumn. Upper parts brown. Rump yellow-green. Under-parts pale yellowish green, feathers with grey-brown tips. Yellow on ventral surfaces prominent and forming a distinct " patch." Female, autumn. Upper parts olivaceous brown, feather centres darker, forming nebulous striæ. Under-parts suffused greenish grey, ventrally whiter.

Status in the British Isles.—Winter visitor and passage migrant.

8. Chloris chloris turkestanica Sarudny, 1907 : Turkestan.

Male, autumn. Paler above than *Ch. ch. chloris* and with brighter yellow under-parts. Female, autumn. Paler and greyer than *Ch. ch. chloris*. A large race.

Status in the British Isles.—One record. Male, adult. 30 January, 1947, Ashford Castle, Co. Mayo, Eire (*vide* Meinertzhagen, Bull. B. O. C. 67, 1947, p. 76).

Notice.

The next Meeting of the Club will take place on 19 May, 1948, at the Rembrandt Hotel, Thurloe Place, S.W. 7. Dinner at 6.30 p.m.

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

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The four-hundred-and-seventy-seventh Meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, S.W.7, on Wednesday, 19 May, 1948, with dinner at 6.30 P.M.

Chairman : Dr. J. M. HARRISON.

Members present :—F. J. F. BARRINGTON ; Mrs. G. M. CHADWYCK-HEALEY ; J. FISHER ; R. S. R. FITTER ; W. E. GLEGG (*Hon. Secretary*) ; Capt. C. H. B. GRANT (*Editor*) ; Dr. J. G. HARRISON ; P. A. D. HOLLOM ; Capt. C. INGRAM ; Miss E. P. LEACH (*Hon. Treasurer*) ; Dr. G. CARMICHAEL LOW ; C. W. MACKWORTH-PRAED ; G. M. MATHEWS ; Col. R. MEINERTZHAGEN ; E. M. NICHOLSON ; Miss G. M. RHODES ; Lt.-Commdr. C. P. STAPLES ; B. W. TUCKER ; C. N. WALTER ; A. WILLIAMS ; C. DE WORMS ; Col. O. E. WYNNE.

Guests :—Miss T. CLAY ; R. WAGSTAFFE.

Members, 23 ; Guests, 2 ; Total, 25.

Heligoland before and after the War.

Mr. JAMES FISHER gave a very interesting talk on a visit to Heligoland in May 1947, and showed slides depicting the island before and after the war.

Exhibition of varieties of the Red-legged Partridge and Woodcock.

Dr. J. M. HARRISON exhibited specimens and made the following remarks :—

The pale variety of the Red-legged Partridge, *Alectoris rufa rufa* (Linnæus), exhibited was shot near Woodbridge, Suffolk, on 4 October,

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1934. The bird is a male practically through the moult. It will be seen that the red pigment in the feathers is lacking to a great extent, although, in the fresh state the bill, tarsi, feet and orbicular skin were all normally coloured. Ticehurst ('A History of the Birds of Suffolk,' 1932, p.480) mentions white, pied and a buff variety.

This specimen was described and figured in 'The Field' of January 1935 by me.

The Woodcock, *Scolopax rusticola* Linnæus, exhibited may best be described as a pale buff variety. It is a female and was shot by Mr T. C. Gregory, near Brabourne, in the Canterbury district, on 3 January, of this year. In this case it will be seen that the rust and black pigments are much diluted. The bird is a female.

In showing these two specimens I would like to stress the importance of recording the sex of all such aberrant individuals wherever possible, in addition to the date and locality. It may well be that some of these varieties will be found to be sex-linked, and also possibly of very restricted distribution locally.

A new Race of Barbet from South-western Tanganyika Territory and Northern Nyasaland.

Mr. C. W. Benson sent the following description and the type for exhibition :—

Buccanodon olivaceum rungweensis, new race.

Description.—Differs from *Buccanodon olivaceum olivaceum* (Shelley), in being greyer, less olive-green from chin to chest and down centre of belly. From *Buccanodon olivaceum belcheri* Sclater, it differs mainly in having the top of the head duller and more brownish, and in lacking the black sides to the face and chin to chest.

Distribution.—South-western Tanganyika Territory in the Rungwe district, to northern Nyasaland in the Masuku area, Karonga district.

Type.—In the British Museum. Adult male, collected at Isoko, Rungwe district, south-western Tanganyika Territory, on 11 September, 1947, by C. W. Benson. Collector's no. N 5186. Brit. Mus. Reg. no. 1947.95.23.

Measurements of type.—Wing 91, culmen from base 21, tail 52, tarsus 23 mm.

Remarks.—Two males and two females are from Isoko, Tanganyika Territory, and one male and one female are from Matipa, Masuku area, Karonga district, northern Nyasaland. Two adult males and a young female from Igale, Poroto Mts., and Rungwe Mt., south-western Tanganyika Territory, collected by Loveridge, and very kindly loaned by

Mr. J. L. Peters from the Museum of Comparative Zoology, Harvard, U.S.A., have also been examined, and agree perfectly with the above series, which is in the British Museum collection. I am indebted to Captain C. H. B. Grant and Mr. C. W. Mackworth-Praed for making comparisons. For similar reasons I also thank Mr. R. E. Moreau.

New Races of a Tit-Babbler and a Lark from the Basutoland Mountains.

Mr. Jack Vincent sent the following :—

Parisoma layardi barnesi, new race.

Description.—Differs from *Parisoma layardi* Hartlaub, in being much darker and greyer above, and whiter below; the entire upper side is, in fact, dark slate grey without the brownish tinge of the typical bird, this latter coloration being evident only in the juveniles of this new race. An even more marked difference is found in the bill, which when compared with typical *P. layardi* is most noticeably smaller and finer.

Distribution—At high altitudes in the Quathlamba Drakensberg on the extreme eastern border of Basutoland.

Type.—Adult male Lekhalabaletsi valley, above junction of rivers Lekhalabaletsi and Jareteng, Basutoland. 29° 17·2′ South Lat.–29° 24′ East Long. at 8900 feet. 7 December, 1947. Collected by Jack Vincent. Collector's no. 2490.

Measurements of type—Wing 67, exposed part of culmen 10, culmen from base 13, tail 61, tarsus 21 mm.

Remarks.—The type was obtained at the nest, together with the adult female and their single juvenile. The birds were found to be quite common between 8000 and 9000 feet a.s.l., and a series of eight examples was obtained, all are being presented to the British Museum. Nests and eggs were collected. The species appears to have been known hitherto only from very different terrain at much lower altitudes in the Cape Province and South-West Africa.

I thank Dr. Austin Roberts for his assistance when I examined specimens of the nominate race in the Transvaal Museum This new race is named in honour of Mr. Phil Barnes, recently Conservator of the Giant's Castle Game Reserve on the Drakensberg escarpment of Natal, for his kind assistance and advice in connection with my two trips into the Basutoland mountains. A keen ornithologist, Mr. Barnes was the first to discover the Siskin and the Seedeater, respectively named *Spinus symonsi* and *Serinops flaviventris guillarmodi* by Dr. Austin Roberts. It is of interest that my first meeting with this new Tit-Babbler was at the type-locality of those two birds.

CALENDULA MAGNIROSTRIS MONTIVAGA, new race.

Description.—Differs from *Calendula magnirostris harei* Roberts, in being darker above and below. So far as the upper side is concerned the dark centres to the feathers are more pronounced, giving a greater suffusion of sepia coloration; whilst on the underside the breast and abdomen are more buff in colour with none of the yellowish tinge. As in the case of the Tit-Babbler just described, an even greater difference is found in the bill which is markedly shorter, finer, and less deep than in all birds from lower altitudes. With regard to this bill character it may be said that this new race differs from *C. m. harei* just as much as the latter differs from the very large billed *C. m. magnirostris* (Stephens).

Distribution.—At high altitudes in the Quathlamba Drakensberg on the extreme eastern border of Basutoland.

Type.—Adult male. Sanqubetu valley, at junction of rivers Lekhalabaletsi and Sanqubetu, Basutoland. 29° 16·5′ South Lat.–29° 21′ East Long. at 8000 feet. 17 October, 1946. Collected by Jack Vincent. Collector's no. 2407.

Measurements of Type.—Wing 104·5, exposed part of culmen 14·5, culmen from base 19, tail 63, tarsus 26, hind-claw 10·5 mm.

Remarks.—The type, a breeding bird, was obtained with its adult female. The birds were not uncommon, and although more general around the 8500 feet level they were noticed from an altitude of 9600 feet near the top of the range down to about 7800 feet. Six examples were secured, including one juvenile, all are being presented to the British Museum. Nests and eggs were obtained.

The type-locality of this new lark is the identical spot where the first examples of the Siskin and Seedeater already mentioned were collected, and since the Sanqubetu valley does not appear on most maps the latitude and longitude here given may prove useful for future reference.

Again I thank Dr. Austin Roberts for his assistance, when he permitted me to examine material of his race *C. m. harei* in the Transvaal Museum.

It is hoped that further details of these birds and the area in which they were collected will appear later in the 'Ibis.'

White-spotted Bluethroat in the Balearic Isles.

Mr. PHILIP W. MUNN sent the following :—

With reference to Col. W. A. Payn's remarks on White-spotted Bluethroats from Tangier in the Bull. B. O. C. 68, 1948, p. 71, the following data may be of interest.

The Bluethroat occurs in small numbers in the Balearic Islands on migration, and records are as follows :—

Observed by von Jordans in Majorca in March and April, 1913, *see* 'Falco,' Aug. 1914, p. 57.

Noted by Jourdain, in Iriza, in May 1930

Noted by Ticehurst and Whistler in Iriza in May 1930, but recorded as *Cyanosylvia svecica gætkei* (Kleinschmidt), *see* 'Ibis,' Oct. 1930, p. 659.

Observed, and some specimens obtained, by myself, at Alcudia, Majorca in March 1927 ; October 1930 ; March 1931 ; March and April 1932 ; March and April 1934 ; October 1935. All with little or no white spot on the throat.

The Long-legged Buzzard in Northern Rhodesia.

Mr. C. W. Benson sent the following note :—

Mr. E. L. Button has had in his collection a specimen supposedly of *Buteo buteo vulpinus* Gloger, a male taken by him at Kasama, Northern Rhodesia on 21 November, 1938. He had considerable doubts that this identification was correct, by reason of its unduly long wing-measurement, *i.e.* 441 mm. It is undoubtedly *Buteo rufinus rufinus* (Cretzschmar), not *B. b. vulpinus*. Mr Button has presented it to the British Museum, where the identification has been confirmed by Captain C. H. B. Grant. There appears to be no previous record from south of the Anglo-Egyptian Sudan.

Notes on Western Palæarctic Birds.

Mr. P. A. Clancey sent the following two notes :—

(1) Some remarks on British *Phylloscopus sibilatrix* (Bechstein) :—

Ticehurst, 'Genus *Phylloscopus*,' 1938, p. 72, dismisses the claims of the races *Phylloscopus sibilatrix erlangeri* Hartert, 1909 : Oum R-Biah, east of Mazagan, Morocco, and *Phylloscopus sibilatrix ludmilæ* Snigirewski, 1931 : Miass, S. Urals, U.S.S.R., and uses a binomial for the species. In support of this action Ticehurst states, *loc. cit.*, that he examined a very large series of *Phylloscopus sibilatrix* from all over its range and could not detect any differences which would appear to be constant enough to separate any race. Ticehurst does not indicate what indigenous British *P. sibilatrix* were examined in the survey of races.

I find that on comparison with material from central and south-central Europe, British birds are separable in series on account of their rather duller

and greener upper parts and slightly more greenish-lemon-yellow throats. The differences, though apparently constant as far as my breeding material goes, are, perhaps, not sufficiently adequate upon which to erect a distinguishable form. British birds have an available name in the *Sylvia sylvicola* of Montagu (*vide* Trans. Linn. Soc. London, 4, 1798, p. 35): England, should a comparison between really comprehensive breeding series of British and central European (topotypical of *Phylloscopus sibilatrix* (Bechstein), 1793: mountains of Thuringia, Germany (*vide* 'Naturforscher,' 27, 1793, p. 47)) specimens warrant the recognition of a race.

(2) On some Redshanks ascribable to the race *Tringa totanus robusta* (Schiöler), obtained in Lancashire:—

Schiöler, Dansk. Orn. Toren. Tidskrift, 13, 1919, p. 211, described the Icelandic race as *Totanus calidris robustus*. Hartert, Vög. pal. Fauna, 2, Heft 7 and 8, 1921, p. 1611, gives (after Schiöler) the measurements of 35 males—wings 157–171, bills 36·5–43 mm; 15 females—wings 158–170, bills 38–44 mm. J. M. Harrison, 'Ibis,' 1944, pp. 493–503, in his revision of the western Palæarctic races, has given slightly larger measurements for the Icelandic race than those of Schiöler's quoted by Hartert. Harrison's measurements are:—7 males—wings 165–172 mm., 3 females—wings 164–167 mm. Witherby, 'Handbook of British Birds,' 4, 1940, p. 331, gives precisely similar measurements to those supplied by Hartert (after Schiöler), but states:—"A number of British-taken females had wings over 170 and up to 175." Birds collected in Lancashire in October and November, 1947, have wing-measurements of as much as 176·5 and 177 mm., and it is with these very large examples in particular that I intend to deal with in this short note.

In winter dress *T. t. robusta* is reputed to be darker than either *T. t. totanus* or *T. t. britannica*, and judging by the material in my collection taken prior to September, 1946, this certainly seems to be generally so, but the issue is now complicated by the fact that the large birds recently taken in Lancashire are quite unlike the specimens I had ascribed earlier to the race *T. t. robustus*, being extremely pale and grey on the upper parts. In the main these birds are in tone not unlike the smaller *T. t. totanus* and *T. t. britannica*, but the substantial difference in size rules out any question of close racial affinity.

As far as can be ascertained from available literature no breeding specimens of the Icelandic race with wings in excess of 172 mm. have ever been taken. Of the large material available to Schiöler none exceeded 171 mm. in wing-measurement, and of the eleven breeding *T. t. robusta*

used by Harrison in his revision, two males had wings of 172 mm. The recorded range of wing-measurements for breeding *T. t. robusta* is, therefore, males 157–172, females 158–170 mm. In support of these measurements it should be remarked that not one British winter-taken *T. t. robusta* with dark upper parts in my collection has a wing exceeding 172 mm. in length. (The adult female recorded in 'British Birds,' 32, 1939, p. 374, with a wing of 175 mm. is in error. The bird has a wing of 171·5 mm., and has a dark upper surface.) In the specimens from Lancashire both sexes show equal colour and size differences. Witherby, *loc. cit.*, implies by his remarks that female examples alone reach 175 mm. in wing-measurements. This is not so. Two males taken on 26 October, 1947, near Fleetwood, Lancashire, have wings measuring 176·5 and 177 mm. Of my series of birds from Lancashire with pale and greyish upper parts not one specimen has a wing of less than 169 mm., and the range of wing-measurements for this type is 169–177 mm.

Further collections of northern breeding birds are obviously needed to ascertain whether (*a*) topotypical *T. t. robusta* does in fact have a substantially larger range of wing-measurements than at present known, and has light and dark phases of winter dress, or (*b*) there is an as yet undescribed form which differs from *T. t. robusta* by its still larger size and by the paler and greyer winter dress. The British race, *Tringa totanus britannica* Mathews, 1935: Hampshire, England, rarely reaches 166 mm. in wing-measurement, and the Continental form, *Tringa totanus totanus* (Linnæus), 1758: Sweden, seldom 158 mm. (topotypes), and these two races would not appear to have any bearing on the present problem.

The uncritical assignment of all large birds taken in Britain in the non-breeding season to the Icelandic race is clearly obscuring a problem which will require to be elucidated before a final and lasting arrangement of the western Palæarctic races of *Tringa totanus* is at all possible.

Notes on Eastern African Birds.

Captain C. H. B. Grant and Mr. C. W. Mackworth-Praed sent the following two notes :—

(1) On the conspecific status of *Treron australis* (Linnæus) and *Treron wakefieldii* Sharpe :—

In the Bull. B. O. C. 57, p. 74, 1937, we discussed the races of *Treron wakefieldii* and treated it as a species in view of the possibility of an overlap in distribution between this and the African mainland races of *T. australis*.

Several past and present authors have considered these two to be races of each other and since 1937 the British Museum has received many more specimens. A re-examination of the available evidence shows that *T. wakefieldii* should be treated as a race of *T. australis*.

The races we now recognize in Eastern Africa are as follows :—

Treron australis wakefieldii Sharpe.

Treron wakefieldii Sharpe, P. Z. S. 1874, for 1873, p. 715, pl. 58, fig. 2 : Mombasa, eastern Kenya Colony.

Grey nuchal collar distinct ; upper side of tail-feathers green and yellow. Wing 149 to 165 mm.

Distribution.—Eastern Kenya Colony from Lamu and the Tana River, to eastern Tanganyika Territory.

Treron australis salvadorii (Dubois).

Vinago calva salvadorii Dubois, P. Z. S. 1897, p. 784 : Western shore of Lake Tanganyika, Belgian Congo.

Grey nuchal collar distinct : upper side of tail-feathers grey. Wing 160 to 179 mm. Specimens from Kigoma district and Shinyanga, Tanganyika Territory have yellowish ends to tail-feathers.

Distribution.—Southern Sudan at the Imatong Mts., Uganda, Kenya Colony west of Lake Rudolf, eastern Belgian Congo and western Tanganyika Territory as far east as Mwanza and Shinyanga.

Treron australis uellensis (Reichw.).

Vinago calva uellensis Reichenow, J. f. O. 1912, p. 320 : Jakoma, Uelle River, north-eastern Belgian Congo.

Lacks, or almost lacks, the grey nuchal collar ; upper side of tail-feathers grey. Wing 157 to 171 mm.

Distribution.—North-eastern Belgian Congo and south-eastern French Equatorial Africa to southern Sudan (but not the Imatong Mts) and south-western Abyssinia.

Treron australis brevicera Hart. & Goods.

Treron calva brevicera Hartert & Goodson, Nov. Zool. 25, 1918, p 353 : Moshi, northern Tanganyika Territory.

Similar to *T. a. salvadorii*, but forehead usually feathered ; upper side of tail-feathers grey with often yellowish ends. Wing 157 to 179 mm.

Distribution —Southern Kenya Colony and eastern Tanganyika Territory as far south as Iringa and as far west as Mbulu, but not the coastal areas of either Kenya Colony or Tanganyika Territory.

Treron australis clayi (White).

Vinago australis clayi White, Bull. B. O. C. 63, p. 63, 1943 : Isoka, north-eastern Northern Rhodesia.

Differs from *T. a. salvadorii* in having the upper side of the tail green with usually a grey wash at the base. Wing 161 to 185 mm.

Distribution.—Southern Belgian Congo, Northern Rhodesia, south-western Tanganyika Territory and Nyasaland to Portuguese East Africa as far east as Tambarara.

Note.—Intermediates between this and the Uganda race occur in western Tanganyika Territory.

(2) On the Races of *Chalcomitra senegalensis* (Linnæus) occurring in Eastern Africa :—

Sclater, Syst. Av. Æthiop. 2, 1930, p. 701, recognizes four races in Eastern Africa. Van Someren, Nov. Zool. 29, 1922, p. 199, recognizes three races including *C. s. atra* Mearns, and places *C. s. inæstimata* Hartert, as a race of *C. gutturalis* (Linn.), and in Nov. Zool. 37, 1932, p. 356, recognizes three races and again places *C. inæstimata* as a race of *C. gutturalis*. Friedmann, Bull. 153, U.S. Nat. Mus. 1937, p. 363, discusses the races and considers it not unlikely that *C. hunteri* (Shelley) and *C. cruentata* (Rüppell) will eventually be placed as races of *C. senegalensis*. Vincent, Ibis, 1936, p. 69, places the northern Portuguese East African birds under *C. s. inæstimata*. Meise, Mitt. Zool. Mus. Berlin, 22, 1937, p. 145, places his Matengo Highland birds under *C. s. inæstimata*, and gives culmen in males as 23–26·5 ; females 21–23 mm. Grote, J. f. O. 1921, p. 410, states that both *C. gutturalis* and *C. æquatorialis* are found on Ukerewe Island, but in a footnote states that two specimens have metallic wing shoulders.

Our examination of the series in the British Museum collection and of the recent literature allows us to recognize four races in Eastern Africa as follows :—

A. Wing shoulder metallic :—

Chalcomitra senegalensis gutturalis (Linn.).

Certhia gutteralis Linnæus, Syst. Nat. 12th ed. i. 1766, p. 186 : South-eastern Cape Province, South Africa ; of which *Cinnyris gutturalis saturatus* Reichenow, J. f. O. 1891, p. 160 : Angola, *Cinnyris gutturalis inæstimata* Hartert, in Ansorge's Under the Afr. Sun, app. 1899, p. 351 : Dar-es-Salaam, eastern Tanganyika Terirtory ; and *Chalcomitra borgerto* Reichenow & Neumann, O.M. 1905, p. 182 : Muyuzi, foot of east Usambara Mts., north-eastern Tanganyika Territory are synonyms.

Wing, male 67 to 80, female 62 to 73 mm.; culmen from base, male 25 to 32; female 24 to 30 mm. One hundred and seventy-eight specimens examined.

Distribution.—South-eastern Kenya Colony from southern Ukamba and Lamu to Tanganyika Territory as far west as Kigoma, Shinyanga, Mbulu, Esimingor and Monduli, northern Portuguese East Africa east of Tete, Angola, Damaraland, eastern Cape Province and Natal, also Zanzibar Island.

B. Wing shoulder not metallic :—

Chalcomitra senegalensis cruentata (Rüpp.).

Nectarinia cruentata Rüppell, Syst. Uebers, 1845, p. 26, pl. 9 : Simen Province, northern Abyssinia.

Chin and throat non-metallic black. Wing, male 68 to 80, female 63 to 71 mm. Fifty-two specimens examined.

Distribution.—The Sennar district of the eastern Sudan and Eritrea to central Abyssinia.

Chalcomitra senegalensis acik (Hartm.).

Nectarinia acik Hartmann, J. f. O. 1866, p. 205 : Djur, Bahr-el-Ghazal, south-western Sudan.

Chin and throat metallic. Wing, male 65 to 71, female 60 to 63 mm.; culmen from base, male 22 to 25, female 22 to 25 mm. Sixty-four specimens examined.

Distribution.—Northern Cameroon to western and southern Sudan as far east as Torit and the Dongatona Mts., north-eastern Belgian Congo and northern Uganda.

Chalcomitra senegalensis lamperti (Reichw.).

Cinnyris senegalensis lamperti Reichenow, J. f. O. 1897, p. 196 : Moshi, north-eastern Tanganyika Territory, of which *Cinnyris æquatorialis* Reichenow, O.M. 1899, p. 171 : Bukoba, north-western Tanganyika Territory; *Chalcomitra senegalensis atra* Mearns, Proc. U.S. Nat. Mus. 48, 1917, p. 388 : Thika River, south-central Kenya Colony and *Chalcomitra senegalensis erythrinæ* Stoneham, Bull. Stoneham Mus. 1933, no. 14 : East Surrey Coffee Estates, Trans-Nzoia, western Kenya Colony are synonyms.

We can see no character by which *C. a. æquatorialis* can be separated from *C. s. lamperti*.

Size larger and longer billed than *C. s. acik*. Female not so dusky and less densely marked below. Wing, male 69 to 81, female 64 to 70 mm.; culmen from base, male 28 to 31, female 25 to 29 mm. One hundred and ten specimens examined.

Distribution.—Southern Sudan at Imatong Mts. and Laboni Forest, eastern Belgian Congo, Uganda, Kenya Colony (but not south-east of the Chyulu Hills) to northern Tanganyika Territory from the Bukoba District to Loliondo, Moshi and Mt. Kilimanjaro.

Remarks.—The culmen measurements of *C. s. gutteralis* and *C. s. inæstimata* show that the shorter bill character given to the latter cannot be upheld. Roberts, Bds. S. Afr. 1942, p. 329, states that Zambezi Valley birds are rather smaller, *i.e.* rather shorter billed as measured by us, but they again increase in length in Tanganyika Territory, and the most northern birds in this area have bills as long as South African.

There is no doubt that *Chalcomitra hunteri* (Shelley) must be considered as a species, as not only has it such characters as the narrow yellow subterminal bar on the neck and chest and the metallic lower rump, but it has an overlap in distribution with *C. s. gutturalis* in south-eastern Kenya Colony and most probably with *C. s. lamperti* in the Mt. Kilimanjaro area.

Notices.

NEW ORDNANCE MAPS.

The Director General of the Ordnance Survey has kindly informed the Editor that a series of new sheets of England and Wales are now available. These " Two and a half inch maps " have an approximate area of 40 square miles each, and are about $15\frac{3}{4} \times 15\frac{3}{4}$ inches square. They are issued in three editions, *i.e.* Fully coloured. Outline. Administrative areas. They are obtainable from all stockists of Ordnance Survey publications at 2*s.* per sheet, paper flat, and 3*s.* per sheet, mounted and folded.

NEXT MEETING.

The next Meeting of the Club will take place on Wednesday, 16 June, 1948, at the Rembrandt Hotel, Thurloe Place, S.W. 7. Dinner at 6.30 P.M.

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

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The four-hundred-and-seventy-eighth Meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, S.W.7, on Wednesday, 16 June, 1948, with dinner at 6.30 P.M.

Chairman : Dr. J. M. HARRISON.

Members present :—Miss C. M. ACLAND ; Miss P. BARCLAY-SMITH ; F. J. F. BARRINGTON ; Miss J. M. FERRIER ; W. E. GLEGG (*Hon. Secretary*); Capt. C. H. B. GRANT (*Editor*) ; F. A. DE HAMEL ; B. G. HARRISON ; J. R. JUSTICE ; Miss C. LONGFIELD ; Dr. G. CARMICHAEL LOW ; C. W. MACKWORTH-PRAED ; Sir P. MANSON-BAHR ; G. M. MATHEWS ; Col. R. MEINERTZHAGEN ; E. R. PARRINDER ; Mrs. D. PEALL ; Major G. H. R. PYE-SMITH ; P. SCOTT ; Lt.-Commdr. C. P. STAPLES ; Lt.-Col. W. P. C. TENISON (*Vice-Chairman*) ; B. W. TUCKER ; C. N. WALTER ; C. DE WORMS.

Guests :—Mrs. F. M. GAIRLOCH ; S. S. GAIRLOCH ; Mrs. F. DE HAMEL ; Dr. L. A. VAN DER MOLEN ; A. G. B. RUSSELL ; R. WAGSTAFFE.

Members, 25 ; Guests, 6 ; Total, 31.

Systematic Notes on Petrels.

Mr. G. M. MATHEWS, C.B.E., read the following, illustrated by drawings thrown on the screen. Compare 'Ibis,' 1934, pp. 807–816 ; 1935, pp. 577–582.

There is a growing desire to place the Albatrosses and Mollymawks in one genus and we must be consistent. Colour has played a large part as a generic character. In his 'Monograph' in 1907, Godman placed *Procellaria albigularis* Finsch, in the same genus as *P. grallaria* Vielliot,

in spite of the former's legs and feet being so distinct from all other Petrels. *Thalassidroma tethys* Bonaparte, remained in the same genus as *Hydrobates pelagica* Linnæus, for the sixty years, till 1915, ' Ibis,' p. 577, when it was placed in the genus *Oceanodroma* Reichenbach, thus connecting these genera.

Procellaria Linnæus, has the tubes raised above the culmen, and so have *Adamastor* Bonaparte, *Ardenna* Reichenbach, *Hemipuffinus* Iredale, and *Calonectris* Mathews & Iredale, while in *Puffinus* Brisson, the tubes are bevelled, but connected to the above genera through *Neonectris* Mathews, and *Thyellodroma* Stejneger, in gradation.

The bills of the six species of Prions vary considerably, but the birds show a general agreement in colour, so only one genus is necessary, and the same applies to the Pelecanoideidæ ; apparently colour is of importance, as some workers admit *Adamastor* as distinct from *Procellaria*.

We then have the following genera and species :—

(1) *Diomedea exulans* Linnæus ; *D. epomophora* Lesson ; *D. albatrus* Pallas ; *D. immutabilis* Rothschild ; *D. nigripes* Audubon ; *D. irrorata* Salvin ; *D. melanophris* Temminck ; *D. bulleri* Rothschild ; *D. chrysostoma* Forster ; *D. chlororhynchus* Gmelin ; *D. cauta* Gould. (*Phœbetria* Reichenbach) *palpebrata* Forster (*fusca*) Hilsenberg.

(2) *Macronectes giganteus* Gmelin.

(3) *Daption capensis* Linnæus.

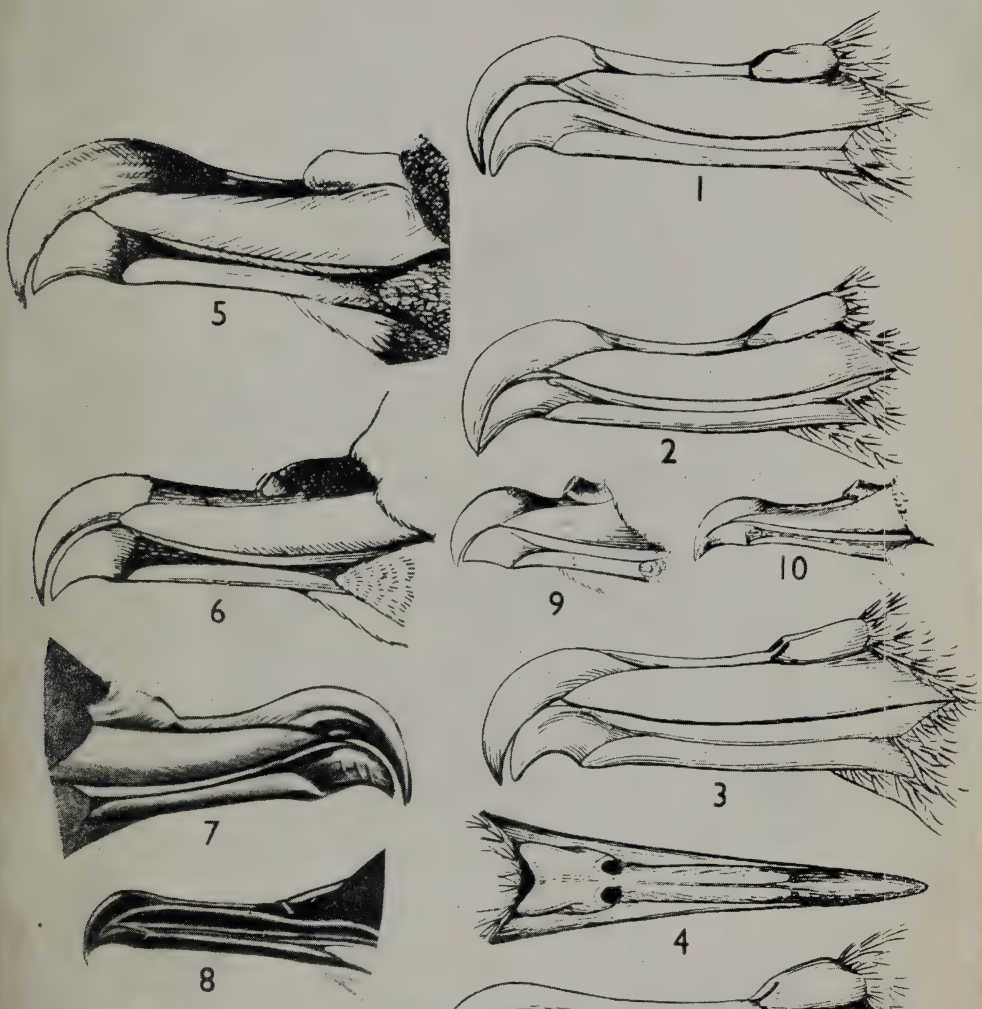
(4) *Fulmarus glacialis* Linnæus. (*Priocella*) *antarctica* Stephens.

(5) *Thalassoica antarctica* Gmelin.

(6) *Bulweria bulwerii* Jardine ; *B. brevirostris* Lesson ; *B. macroptera* Smith ; *B. melanopus* Gmelin ; *B. lugens* Kuhl ; *B. macgillivrayi* Gray ; *B. lessoni* Garnot (*B. incerta*) Schlegel ; *B. hasitata* Kuhl (*B. caribbæa*) Carte ; *B. rostrata* Peale ; *B. alba* Gmelin (*B. magentæ*) Giglioli ; *B. inexpectata* Forster ; *B. mollis* Gould (*B. deceptornis*) Mathews ; *B. neglecta* Schlegel (*B. heraldica* Salvin and *B. arminjoniana* Giglioli) ; *B. phæopygia* Salvin ; *B. externa* Salvin (*B. cervicalis* Salvin) ; *B. cooki* Gray ; *B. leucoptera* Gould ; (*Pagodroma*) *nivea* Forster (*Halobæna*) *cærulea* Gmelin.

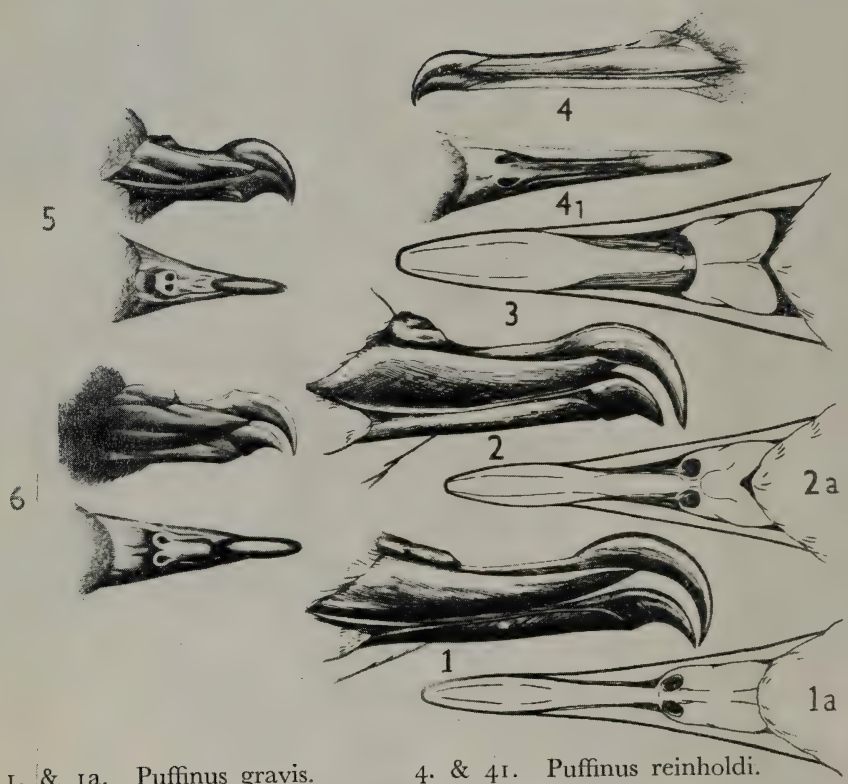
(7) *Pachyptila vittata* Forster ; *P. salvini* Mathews ; *P. desolata* Gmelin ; *P. belcheri* Mathews ; *P. turtur* Kuhl ; *P. crassirostris* Mathews.

(8) *Procellaria æquinoctialis* Linnæus ; *P. parkinsoni* Gray. (*Adamastor*) *cinerea* Gmelin (*Ardenna*) *gravis* O'Reilly ; *P. diomedea* Scolopi ; *P. creatopus* Coues ; *P. leucomelas* Temminck ; *P. carneipes* Gould ; (*Puffinus*) *puffinus* Brunnich ; *P. baroli* Bonaparte ; *P. lherminieri*



1. Puffinus diomedea.
2. ,, d. disputans.
3. ,, d. borealis.
4. ,, leucomelas.
5. Procellaria aequinoctialis.
6. Admastor cinerea.
7. Puffinus carneipes.
8. ,, or Alphapuffinus.
9. & 10. Pachyptila (2 species)

Drawn by Lilian Medland and C. E. Talbot Kelly



1. & 1a. Puffinus gravis.
2. & 2a. ,, creatopus
3. Procellaria aequinoctialis.
4. & 4₁. Puffinus reinholdi.
5. Bulweria bulweri.
6. Pterodroma macgillivrayi.

Drawn by F. W. Frohawk and C. E. Talbot Kelly

Lesson ; *P. reinholdi* Mathews ; *P. tenuirostris* Temminck ; *P. griseus* Gmelin ; *P. nativitatis* Streets ; *P. pacifica* Gmelin.

(9) *Hydrobates pelagica* Linnæus ; *H. microsoma* Coues ; *H. tethys* Bonaparte ; *H. castro* Harcourt ; *H. hornbyi* Gray ; *H. furcata* Gmelin ; *H. leucorhoa* Vieillot ; *H. macrodactyla* Bryant ; *H. homochroa* Coues ; *H. melania* Bonaparte (*H. matsudairæ* Kuroda) ; *H. markhami* Salvin ; *H. owstoni* Mathews & Iredale.

(10) *Oceanites oceanicus* Kuhl ; *O. gracilis* Elliot ; *O. marinus* Latham ; *O. nereis* Gould.

(11) *Cymodroma amphitrite* Jardin ; *C. tropica* Gould ; *C. deceptis* Mathews ; *C. grallaria* Vieillot ; *C. melanoleuca* Salvadori ; *C. lineata* Peale ; *C. maoriana* Mathews.

(12) *Pelecanoides urinatrix* Gmelin ; *P. garnoti* Lesson ; *P. magellani* Mathews ; *P. georgicus* Murphy.

Taking the Puffinidæ of the ' Catalogue of Birds,' we have in the same genus *Puffinus* :—

Tail long, cuneate	for some forms.
Tail shorter, rounded	for others.

In the Hydrobatinæ we have :—

Tail cuneate	for one colour genus.
Tail rounded	for a single species.

In the Diomedeidæ we have :—

Tail long, cuneate	for one colour genus.
Tail short, rounded	for some forms.

As we do not admit colour as of generic value, we must lump. In other words we have all Shearwaters in one genus ; all the Albatrosses in another genus ; one genus for all the Bulweriinæ ; another for all the Pachytilinæ ; one genus for Hydrobatinæ ; two genera in the Oceanitinæ, and one genus for the Pelecanoideidæ. In the Fulmarinæ, three or four monotypic genera if we include *Thalassoica*, or a dozen genera for the order Procellariiformes, and about seven dozen species.

Bonaparte in C. R. 42, p. 769, April 28, 1856, placed *A. carneipes* Gould, 1844, in *Adamastor* together with its genotype *P. cinerea*. Also the two wedge-tailed species *P. pacifica* and *P. leucomelas* in *Thiellus=Thyellodroma* Stejneger, 1888, the former a uniform all dark bird, the other bi-coloured.

Taking as a standard of a genus that used in the ' Catalogue of Birds,' Vol. 25, 1896, to Peters' ' Check-List,' 1931, and others workers to date,

that is over half a century of work, we find that *Puffinus* includes birds with long wedge-shaped tails and others with short rounded tails ; those uniform in colour, others bi-coloured ; those with bills with the latericorn expanded at the base, others with this part narrow. In the ' Ibis,' 1938, Mayaud points out the difference between the skeletons of *P. diomedea* (*P. kuhlii*) and that of *P. gravis*. That is to say, that we do not admit any of the above-mentioned characters as being of generic value. This being admitted by workers, we must be consistent and include *Procellaria acquinoctialis* and *Adamastor cinerea*. I can find no character in the bills that would not include these if we put *Puffinus carneipes* in the same genus as the Manx Shearwater.

The same remarks apply to *Pterodroma*, which should be a synonym of *Bulweria*. In the former we have " nasal opening directed slightly upwards," in the latter " nasal tubes fleshy at the end openings directed forwards and upwards." The tails of the species in each genus are wedge-shaped.

Again, in *Hydrobates* the shape of the tail should not be considered as of generic value, because we have rejected it in *Puffinus*. So we put as synonym of *Hydrobates* the two genera *Oceanodroma* and *Halocyptena*, as *P. tethys* was placed with *H. pelagica* for over half a century and in *Oceanodroma* for a third of a century.

In Oceanitinæ the genera *Pelagodroma* and *Garrodia* have the tarsus scutellated not booted as in *Oceanites*. And in the genus *Cymodroma* the species *C. grallaria* has a scutellated tarsus and *C. tropica* a booted one like *C. lineata* and *C. melanoleuca*, while the tarsus of *C. maoriana* agrees with that of *C. grallaria*. So we only admit the genus *Oceanites* for the first, and *Cymodroma* for the last mentioned.

We do not admit as of generic value in the Oceanitinæ the shape of the foot nor the scutellated tarsus as being different from the booted. We place in the same genus *Pterodroma* the species *P. neglecta*, which nests above ground and is of quiet disposition when handled, with those which burrow underground and are fierce and dangerous to handle. So we add " nesting habits " to those characteristics not considered as of generic value.

Loomis, ' Auk,' October, 1923, gives his reasons for not admitting some genera ; he says, p. 601, " genera in the present system are based solely on external characters " . . . ., on p. 602, " the shape of the tail is not given generic value in the present association." Again, " The booted tarsus proves to be a variable character in *Oceanites* . . . .", which I think should include *Garrodia*, *Pelagodroma* and *Pealea*. And again, " In the present instance no clearer view appears to be gained by elevating the

structural characters of species to characters of monotypic genera." Sharpe, in 1879, placed the Sooty Albatross in the genus *Diomedea*, and this is correct.

All quotations like the above are so very well known to specialists in the Procellariiformes that quoting them is far from necessary, and as a new Check-List is being prepared other views should be given.

Coues, in Proc. Acad. Nat. Sci. Philad. 1864, p. 80, placed *Thalassidroma tethys* in the same genus as *Hydrobates pelagica* ; and p. 83, he put *T. lineata* Peale in the genus *Oceanites*. In 1866, p. 147, he thought that *Pterodroma incerta* was the young of *P. lessoni*, and on p. 189 said of *Pelecanoides* that " the tarsus is excessively compressed and at the same time very deep antero-posteriorly."

Pucheran, in Mag. Zool. 1850, p. 633, said that *Pterodroma brevirostris* (Lesson), 1831, later called *P. aterrima*, 1857, was the same as, and older than, *P. macroptera* Smith, 1840. Compare ' Ibis,' 1935, p. 885.

In the ' Novitates Zoologicae,' 1912, pp. 199, 201–2 and 206 ; and in the same journal, Vol. 39, 1934, pp. 158, 169, 176, 186 and 187, other changes are recorded.

In ' Ibis,' 1936, p. 309, pl. ii, the species *Thalassidroma macgillivrayi* was shown to belong to *Pterodroma* and not to *Bulweria* where it was placed for over seventy years, unless these genera are united, as I think that they should be. This case proves to me that *Pterodroma* is a synonym of *Bulweria* and so is *Halobæna*.

In ' Emu,' 36, p. 96, 1936, *Pterodroma lugens* Kuhl, 1820, is shown to be the correct name for the bird wrongly called *P. brevirostris*, Kerguelan Petrel. In ' Ibis,' 1932, p. 524, the names *P. melanopus* and *P. neglecta* are discussed. Compare also ' Birds of Norfolk Island,' 1928, p. 16. All these and other changes are known to those workers who are interested enough to discuss the order in general. The casual worker on odd species may not care to specialize or to know his literature thoroughly, nor would it be necessary. The making of so many species, formerly admitted to be races, is explained in the above works, some workers may call them representative species not races, a matter of opinion not a fact.

Fregetta versus *Oceanites*.

Of Genera, Godman, ' Monograph 1910,' p. xxxvi, following Salvin in Cat. Bds. B.M. 25, 1896, says that the genus *Garrodia* differs from *Oceanites* in having the " Scutellæ of the front of the tarsus distinct " not obsolete as in *Oceanites*. Is this a good reason for separation ?

It is of interest to find Sharpe, in 1879, Phil. Trans. Roy. Soc. 168, pp. 101–162, uses *Procellaria* (now *Hydrobates*) for *Garrodia nereis* ; and *Oceanites* for *Fregetta tropica* and *O. oceanica*.

In this paper Sharpe had two skins of *O. melanogastra* from Kerguelen ; two of *F. tropica* from the Atlantic and four *O. leucogastra* (=*O. deceptis*), one of which became the type of *F. leucothysanus* in 1937. This author also considered that Gould's *O. leucogaster* was the long-toed form, not the *P. grallaria* of Vieillot which we now know it to be. Examining these eight skins Sharpe says that " the differences between *O. melanogastra* and *O. tropica* are extremely slight, consisting in the white throat and the greater amount of black on the abdomen and centre of the body in the former bird. I believe it possible that *O. leucogastra* [=*O. deceptis*] is also only a stage of plumage of the same species."

Gould figured the bird with a booted tarsus, and so did Godman in his ' Monograph 1907,' pl. 18, under *Cymodroma grallaria*, the bird now called *O. deceptis*. His figure shows the booted tarsus and base of toe joints of the long toes, the diagnostic character, while *C. grallaria* has the scutellated tarsus and toes and the short foot. Godman's figure also shows the white edges to the feathers of the back and in the letter-press says that " This species is very closely allied to *C. melanogaster* but always has a white belly and white margins to the feathers of the back," and on p. xxxvii, " Basal phalanx of the middle toe much flattened and equal to or longer than the remaining joints and claws."

The confusion arose when *P. grallaria* typical was put in with *O. deceptis* and those workers who examined the latter pointed out its resemblance to *F. tropica*, while those who handled *S. grallaria* showed how much it differed from *E. tropica*. At one time I thought *O. deceptis* was a phase of *F. tropica melanogaster*, but we now have so many specimens that this seems impossible, although they sometimes occur together, while *O. deceptis* has not been recorded in the south of South America.

F. deceptis.

In 1828 Bonaparte described a form of *F. grallaria* as *Th. oceanica* and commented on the shape of the toe-nails ; a bird collected by Macgillivray in 1853 and labelled in error *O. leucogaster* was in fact *O. deceptis*. In 1855 Bonaparte introduced his genus *Fregetta*, and he appears to have had *O. deceptis* and *C. grallaria* in front of him. In one place he says that the type of his genus had a long tarsus, but the foot was small and did not reach beyond the tail ; this is *C. grallaria*. Lower down he says that Gould's *O. leucogastra* differed little from *F. melanogastra* [both having long toes], but did differ from his *Thalassidroma oceanica*= *C. grallaria* with the grebe-like nails. In Bull. B. O. C. 57, p. 144, June 30, 1937, these statements are explained.

Cymodroma.

Tail slightly forked	*C. tropica.* *C. deceptis.* *C. lineata.*	Tarsus and basal toe-joints booted.
Tail slightly wedge-shaped	*C. maoriana*	Tarsus and all toe-joints scutellated.
Tail about even	*C. melanoleuca.*	Tarsus and all toe-joints booted.
Toes of nearly even length	*C. grallaria.*	Tarsus and all toe-joints scutellated.
Tail forked Foot very narrow	*C. amphitrite.*	Tarsus and basal toe-joints booted; basal joints longer than rest of toe.

Oceanites.

Tail slightly forked; webs yellow.	*O. oceanicus.* *O. gracilis.* *O. marinus.*	Tarsus and basal mid toe-joint booted.
Tail about even; webs dark	*O. marinus.* *O. nereis.*	Tarsus and all toe-joints scutellated.

Hydrobates.

Tail rounded ..... *H. pelagica.*
„ wedge-shaped .... *H. microsoma.*
„ forked ..... *H. tethys, H. castro, H. furcata, H. hornbyi, H. leucorhoa, H. macrodactyla, H. melania, H. matsudairæ, H. markhami, H. owstoni.*

Cymodroma lineata. When I had this unique skin figured, Riley, of the Smithsonian Institution, Washington, supervised the drawing. The tail-feathers show a gradual lengthening from 73 mm. for the central pair to 84 mm. for the outer. This does not agree with Peale's coloured drawing, which shows a bird with the central pair of tail-feathers the longest. Godman, in his Monograph, pl. 16, figured a skin in the Paris Museum, which he said resembled a specimen in the Natural History Museum.

The last-mentioned specimen is the type of *C. maoriana* and is figured in 'Novitates Zoologicæ,' 1933, pl. v, and *Pealea lineata* is figured on pl. vi, to show how distinct are these two forms. The wing formula is different and the tarsus is scutellated in *C. maoriana* and not in *C. lineata*. The foot of each form is also figured in pl. ix, so that comparisons can the better be made. In February 1948, Dr. Berlioz again examined the Paris Museum birds and considered the tails to be even, not slightly wedged as in the British Museum specimen. The tails of the two mounted specimens in Paris measure 73 and 75 mm; the London bird measures, central feathers 68, outer 63 mm.

Cymodroma.

C. tropica, C. deceptis, C. lineata have slightly forked tails, and the tarsus and basal toe-joints booted.

C. maoriana has the tail slightly wedge-shaped, and the tarsus and all toe-joints scutellated.

C. melanoleuca and *C. grallaria* have the tail even; and toes nearly of equal length. The first mentioned has the tarsus and all the toe-joints booted, the other has these parts scutellated.

C. amphitrite has a forked tail, very narrow foot, tarsus and basal toe-joints booted and it cannot be matched by any other bird in the formation of the legs and feet.

Oceanites.

O. oceanicus and O. gracilis have the tail slightly forked and the tarsus and basal mid toe-joint booted.

O. marinus also has the tail slightly forked, and tarsus and all toe-joints scutellated.

O. nereis has the tail about even and the legs and feet scutellated as in *O. marinus.*

I should like to add an overlooked synonym of *Diomedea chlororhynchus.*

1928. *Diomedea melanoptera* Miranda-Ribeiro, Boletin do Museu Nacional, Rio de Janeiro, vol. 4, no. 4, p. 45. No type-locality, now designated as Tristan da Cunha.

The generic characters given by Salvin in Cat. Birds, 25, p. 348, 1896, are :—

1. Tarsus longer than mid-toe and claw; tail not distinctly forked.. *Hydrobates.*
2. Tarsus not distinctly longer than mid-toe and claw; tail distinctly forked ..... *Oceanodroma.*

Then we have to date the following :—

A. Tarsus *longer* than mid-toe and claw.
H. pelagica, H. tethys, H. microsoma, H. furcata, H. hornbyi, H. melania, H. matsudairæ, H. castro (varies).

B. Tarsus *shorter* than mid-toe and claw.
H. leucorhoa, H. monorhis, H. homochroa, H. macrodactyla, H. markhami, H. owstoni, (*H. castro*).

As in the Procellariidæ we do not admit the shape and construction of the tail, bill, legs and feet to be of generic value, we must follow the same lines in the Hydrobatidæ.

In the genus *Puffinus* we use :

1. Tail long, cuneate (for one species, *P. leucomelas*).
2. Tail shorter, rounded (for another, *P. reinholdi*).

So in the genus *Hydrobates* we use :

1. Tail long, cuneate, for one species, *H. microsoma*.

2. Tail shorter, rounded or nearly even for another, *H. pelagica*.

And in *Procellaria tethys* we find the connecting link between *Hydrobates* and *Oceanodroma* and use the prior genus for the combination.

Diomedea.

A¹. Tail rounded.
  a¹. Latericorn not decidedly widest at base ; wing more than three times the tail length.
    b¹. Feathers at base of lower mandible extending beyond the base of nasal tubes.
      c¹. Naricorns oval and pointed up ; back vermiculated ; tail dark ; eyelids coloured ..... *D. exulans.*
      c². Naricorns round and pointed forward ; body white, wings dark ; eyelids black ..... *D. epomophora.*
    b². Feathers at base of lower mandible not extending beyond the base of nasal tubes.
      c¹. Culmen shorter than tail.
        d¹. Body dark ; sometimes upper and under tail-coverts white ..... *D. nigripes.*
        d². Body white or mainly so.
          e¹. Back white ; head yellowish ..... *D. albatrus.*
          e². Back dark ; head whitish ..... *D. immutabilis.*
      c². Culmen longer than tail ; body vermiculated ; head whitish ..... *D. irrorata.*
  a². Latericorn decidedly widest at base ; wing less than three times the tail length.
    b¹. Culminicorn basally separated from latericorn by a thin membrane.
      c¹. Bill uniform yellow ..... *D. melanophris.*
      c². Culmen and ramus yellow, the remainder dark..... *D. bulleri.*
    b². Culminicorn basally separated from latericorn by a thick membrane.
      d¹. Culmen pointed and yellow and not reaching forehead ; remainder dark ..... *D. chlororhynchus.*
      d¹. Culmen not pointed.
        e¹. Culmen reaching to forehead ; culmen and ramus yellow ; remainder dark ..... *D. chrysostoma.*
        e¹. Culmen rounded and not reaching to forehead ; angular fleshy band at base of ramus ..... *D. cauta.*
A². Tail wedge-shaped ; colour uniform dark ; wing about twice the tail length ; ramicorn with longitudinal groove ..... *D. palpebrata.*

Fulmarinæ.

A¹. Bill depressed ; mandibular rami arched and enclosing an unfeathered sac ; tail-feathers 14 ..... *Daption.*
A². Bill cylindrical ; mandibular rami normal.

b^1. Bill longer than head ; unguis springing from nasal tubes with no intervening space ; nasal tubes longer than half the culmen ; tail-feathers 16 ; large ..... *Macronectes.*

b^2. Bill shorter than head ; unguis divided from tubes ; tail-feathers 12 or 14.

c^1. Bill short and stout : unguis short, robust and very convex ; tail-feathers 14 ..... *Fulmarus.*

c^2. Bill long and slender ; unguis longer, less stout and convex.

d^1. Bill cylindrical ; tail-feathers 14 ..... *Priocella.*

d^2. Bill compressed ; tail-feathers 12 ..... *Thalassoica.*

Bulweria.

Gonys hooked, and longer than the nasal tubes ; nostrils separated by a thin septum.

A^1. Hind claw small ; culmen more than half as long as middle toe and claw.

b^1. Tail decidedly wedge-shaped.

c^1. Tail more than half as long as wing ; colour black .... *Bulweria.*

c^2. Tail less than half as long as wing ; colour and size very varied ..... *Pterodroma.*

b^2. Tail slightly wedge-shaped and white-tipped and less than half as long as wing ..... *Halobæna.*

A^2. Hind claw very large ; equal in length to the nasal tubes ; culmen less than half as long as middle toe and claw ; tail less than half as long as wing and wedge-shaped ; colour white ..... *Pagodroma.*

Bulweria as restricted ; *Pagodroma* and *Halobæna* are all three purely colour genera.

Tail less than half as long as wing and wedge-shaped.	*Pagodroma* ..	Colour uniform white ; culmen less than half as long as mid-toe and claw ; hallux large.
Culmen more than half as long as mid-toe and claw. Hallux small.	*Halobæna* ...	Colour grey above, white below.
	Pterodroma .	Colour and size varied.
Tail more than half as long as wing and wedge-shaped.	*Bulweria* ...	Colour uniform dark.

Genus Pterodroma.

Of the Pterodromine Dove-Petrels we can put them into two divisions : those all dark and those with either all white on the under-surface or mainly so.

All dark birds.

A^1. Bill compressed ; colour dark grey ; tarsi dark ; wing 245 to 265 ; middle toe and claw under 50 mm. *Lugensa lugens.*

A^2. Bill not compressed.

b^1. Bill depth at base more than half its length ; tarsi yellow, wing under 260 mm. ..... *Atterima brevirostris.*

b^2. Bill depth less than half its length ; tarsi dark.

c^1. Wing under 210 mm. ..... *Pseudobulweria macgillivrayi.*

c^2. Wing over 290 ; middle toe and claw over 50 mm.

d^1. Forehead and chin mottled ; inner webs of primaries more or less white ; wing 296 mm. ; general colour slate-grey ..... *Pterodroma melanopus.*

d^2. Forehead and chin grey ; inner web of primaries not white ; wing 294–323 mm. ; general colour sooty-black ..... *P. macroptera.*

The dark bird called *caribbæa* has a white rump, and is said to be a dark form of *hasitata*, the only other form with a white rump.

Dark and light birds.

A^1. Forehead dappled ; dark above.

b^1. White collar ; all white below ; mid-toe and claw over 50 mm.

c^1. Upper tail-coverts white ..... *P. hasitata* (*P. caribbæa*).

c^2. Upper tail-coverts uniform with lower back.

d^1. Collar distinct ; first primary with little or no white on inner web ..... *P. externa* (*P. cervicalis*).

d^2. Collar indicated ; first primary extensively white on inner web ..... *P. externa.*

b^2. No white collar.

c^1. Under surface all white ; wing 274–323 mm..... *P. phæopygia.*

c^2. Under surface not all white ; mid-toe and claw under 50 mm.

d^1. Under-wing lining dark ; wing 245–280 mm.

e^1. Grey band on chest more or less prominent, remainder white ..... *P. mollis.*

e^2. All under-surface uniform grey..... *P. deceptornis.*

d^2. Under-wing lining mostly white.

e^1. Under-surface more or less dappled or all grey.

f^1. Wing 244–267 mm. ..... *P. inexpectata.*

f^2. Wing 207–226 mm. ..... *P. brevipes.*

e^2. Under-surface uniform white ; wing 200–250 mm.

f^1. Above sooty-black ..... *P. leucoptera.*

f^2. Above grey ..... *P. cooki.*

A^2. Forehead not dappled ; dark above ; under-wing lining dark.

b^1. Head and all below white ; wing 304–314 mm..... *P. lessoni.*

b^2. Head and upper breast dark.

c^1. Under tail-coverts dark ; wing 313–335 mm..... *P. lessoni* (*P. incerta*).

c^2. Under tail-coverts whitish.

d^1. Throat not white; wing 280–309 mm. (245 *becki*) ..... *P. rostrata.*
d^2. Throat white.
e^1. Larger and lighter, wing 304 mm. ..... *P. magentæ.*
e^2. Smaller and darker, wing under 290 mm. .. *P. alba.*
A^3. Base of primaries extensively white; wing 280–310 mm. ..... *P. neglecta* (*P. heraldica*, and *P. arminjoniana*).

Some consider that *P. cervicalis* is a race of *P. externa*; *P. deceptornis* is a race of *P. mollis*; *P. incerta* is a race of *P. lessoni*; *P. magentæ* is a race of *P. rostrata*; *P. heraldica* and *P. arminjoniana* are races of *P. neglecta*.

Cookilaria.

This little group, within the genus *Pterodroma*, has been studied by several workers with different results. Fleming, 1941, 'Emu,' has drawings of the skulls of *P. pycrofti*, *P. cooki* and *P. axillaris* which he called species, of the last he makes *P. nigripennis* a race. *P. brevipes* has often been placed as a species. Murphy admits *P. cooki* and *P. leucoptera* as species, the rest as races.

Falla, 1942, 'Emu,' admits as species (1) *P. longirostris* Stejneger, 1893, and puts *P. masafueræ* as a synonym and *P. pycrofti* as a race. (2) *P. leucoptera* with *P. brevipes* as a race. (3) *P. cooki* with *P. orientalis* Murphy, 1929, a synonym, and *P. defilippiana* a race. (4) *P. hypoleuca* with *P. axillaris* and *P. nigripennis* as races. So out of ten admitted forms, seven have been called species.

Another way, in 1934, I admitted *C. leucoptera* as a species, with *C. brevipes*, *C. longirostris*, *C. hypoleuca* and *C. masafueræ* as races. *C. cooki* as a species, with *C. pycrofti*, *C. axillaris*, *C. nigripennis* and *C. defilippiana* as races.

This I think the best way of treating this group.

A. Above grey, wing average over 230 mm. :—

Wing 235; tail 90; bill slender .. *C. cooki.*
,, 235; ,, 102; bill heavier .. *C. defilippiana.*

Wing average under 230 mm. :—

Wing 217; tail 91; axillaries black. *C. axillaris.*
,, 228; ,, 98; ,, white. *C. nigripennis.*
,, 215; ,, 92; ,, white. *C. pycrofti.*

B. Above sooty-black, wing average 225 mm. or over :—

Wing 225; tail 91 ..... *C. leucoptera.*
,, 228; ,, 110 ..... *C. hypoleuca.*

Wing average under 225 mm. :—

Wing 218 ; tail 95 ..... *C. brevipes.*
„ 221 ; „ 100 ..... *C. masafueræ.*
„ 210 or under ; tail 96.. *C. longirostris.*

Pachyptilinæ.

A¹. Culmen longer than length of the tubes.
  *a*¹. Mandibular rami very arched ; feathers on ramus extending past nasal tubes ; lamellæ well developed ; bill depressed.
    *b*¹. Width of upper mandible, 18 mm. or more, and much greater than half bill length ..... *P. vittata.*
    *b*². Width of upper mandible, 17 mm. or less, and less than half bill length ..... *P. salvini.*
  *a*². Mandibular rami not so arched ; feathers on ramus not extending past the nasal tubes ; lamellæ less developed.
    *b*¹. Width of upper mandible about 15 mm. and about half bill length ..... *P. desolata.*
    *b*². Width of upper mandible under 12 mm. ; bill compressed, deeper than wide ..... *P. belcheri.*
A². Culmen shorter than length of the tubes ; unguis large ; lamellæ much reduced.
  *a*¹. Space between unguis and tubes ..... *P. turtur.*
  *a*². No space between unguis and tubes ..... *P. crassirostris.*

Procellariinæ.

Nostrils divided by a thick septum which is more or less visible from above.

A¹. Latericorn distinctly basally expanded.
  *b*¹. Nasal tubes not bevelled.
    *c*¹. Colour black. Space between nasal tubes and base of unguis less than the length of the tubes ..... *Procellaria.*
    *c*². Colour dark above, white below. Space between nasal tubes and base of unguis greater than length of tubes .. *Adamastor.*
  *b*². Nasal tubes more or less bevelled.
    *c*¹. Tail decidedly wedge-shaped ; tarsus less than 4 mm. longer than culmen ..... *Calonectris.*
    *c*². Tail not decidedly wedge-shaped ; tarsus 8 to 13 mm. longer than culmen ..... *Ardenna.*
A². Latericorn not or very little basally expanded ; nasal tubes more or less bevelled.
  *b*¹. Tail not decidedly wedge-shaped ..... *Puffinus.*
  *b*². Tail decidedly wedge-shaped ..... *Thyellodroma.*

The above are now considered to be in one genus, *Procellaria.*

Procellaria.

Birds of various sizes, bills slightly varying; tails long or short; uniform in colour or dark above and white below.

A¹. Latericorn basally expanded.
  *b*¹. Nasal tubes not bevelled, wing over 300 mm. (284 in *P. edwardsi*).
    *c*¹. Colour black, chin white (sometimes white on head).... *P. æquinoctialis.*
      Colour black, including chin ..... *P. parkinsoni.*
    *c*². Colour dark above, white below ..... *P. cinerea.*
  *b*². Nasal tubes more or less bevelled.
    *c*¹. Colour uniform dark ..... *P. carneipes.*
    *c*². Colour dark above, white below.
      *d*¹. Upper tail-coverts white; cervical collar marking distinct dark cap ..... *P. gravis.*
      *d*². Upper tail-coverts not white.
        *e*¹. Tail decidedly wedge-shaped, forehead scollaped ... *P. leucomelas.*
        *e*². Tail not decidedly wedge-shaped.
          *f*¹. Sides of body and under tail-coverts dark..... *P. creatopus.*
          *f*². Sides of body and under tail-coverts white ..... *P. diomedea.*
A². Latericorn not so basally expanded; nasal tubes bevelled.
  *b*¹. Dark above and white below.
    *c*¹. Tail less than twice culmen length ..... *P. reinholdi.*
    *c*². Tail more than twice the culmen.
      *d*¹. Wing 220–255 mm. ..... *P. puffinus.*
      *d*². Wing 169–220 mm.
        *e*¹. Above slaty to slaty black ..... *P. baroli.*
        *e*². Above blackish brown to sooty black ..... *P. lherminieri.*
  *b*². Dark above and below.
    *c*¹. Tail wedge-shaped ..... *P. pacifica.*
    *c*². Tail not wedge-shaped.
      *d*¹. Wing 240–260 mm. ..... *P. nativitatis.*
      *d*². Wing 260–320 mm.
        *e*¹. Wing 260–290; culmen under 36 (29–35) mm..... *P. tenuirostris.*
        *e*². Wing 281–318; culmen over 36 (38–48) mm. .... *P. grisea.*

In the genus *Procellaria* we find six birds with the wing more than three times the length of the tail :—

P. æquinoctialis; *P. parkinsoni*; *P. puffinus*; *P. reinholdi*; *P. tenuirostris*; *P. grisea*;

and ten with it less :—

P. cinerea; *P. carneipes*; *P. gravis*; *P. creatopus*; *P. leucomelas*; *P. diomedea*; *P. nativitatis*; *P. baroli*; *P. lherminieri*; *P. pacifica.*

Only one, *P. reinholdi*, has the tail less than twice the length of the culmen.

Hydrobatidæ.

Nasal opening single, septum not visible; second primary longest; sternum entire.

A¹. Tail less than half the length of the wing.
  b¹. Tail not forked.
    c¹. Tail rounded; upper tail-coverts white ..... *Hydrobates pelagica.*
    c². Tail wedge-shaped; uniform dark ..... *H. microsoma.*
  b². Tail forked.
    c¹. Tail forked for less than 12 mm.; upper tail-coverts white.
      d¹. Wing under 145 mm. ..... *H. tethys.*
      d². Wing over 145 mm. ..... *H. castro.*
    c². Tail forked for more than 20 mm.; uniform dark.
      d¹. Tarsus twice culmen length and longer than mid-toe and claw; feet large; tail less than half the wing ..... *H. melania.*
      d². Tarsus less than twice culmen and equal to mid-toe claw; feet small; tail more than half the wing.. *H. matsudairæ.*
A². Tail more than half the wing.
  b¹. Colour grey above.
    c¹. Grey above and below ..... *H. furcata.*
    c². Grey above, white below; breast band ..... *H. hornbyi.*
  b². Colour sooty above and below.
    c¹. Upper tail-coverts white; tail forked for more than 12 mm.
      d¹. White tail-coverts tipped black; central coverts black, tipped white. Larger..... *H. macrodactyla.*
      d². White tail-coverts uniform white with dusky shafts, central coverts ashy. Smaller ..... *H. leucorhoa.*
    c². Upper tail-coverts not white.
      d¹. A pale area on under wing-coverts, wing less than 152 mm., tarsus less than 25 ..... *H. homochroa.*
      d². No pale area on under wing-coverts; wing over 160 mm.
        e¹. Upper tail-coverts with a drab patch: tarsus heavy, toes stout and long; tarsus more than 26 mm..... *H. owstoni.*
        e². Upper tail-coverts without drab patch; legs and feet small and delicate; tarsus less than 26 mm. *H. markhami.*

Oceanitinæ.

A¹. Dark above, with white upper tail-coverts; white more or less below ..... *Cymodroma.*
  b¹. Throat white; dark breast band ..... *C. amphitrite.*
  b². Throat dark or mainly so, chest dark.
    c¹. Tarsus scutellated.
      d¹. Toes short; foot as long as wide ..... *C. grallaria.*
      d². Toes long; feet longer than wide ..... *C. maoriana.*

c^2. Tarsus booted.
d^1. Foot as long as wide ..... *C. melanoleuca.*
d^2. Foot longer than wide.
e^1. White feathers with dark shafts ..... *C. lineata.*
e^2. White feathers without dark shafts.
f^1. Dark band from chest to vent more or less distinct ..... *C. tropica.*
f^2. No dark band from chest to vent ..... *C. deceptis.*
A^2. Dark or grey above, with white or light upper tail-coverts.. *Oceanites.*
b^1. Tail forked ; webs yellowish.
c^1. Under surface uniform dark ; tarsus booted ..... *O. oceanicus.*
c^2. Under surface whitish.
d^1. Chest and forehead dark ; tarsus booted ..... *O. gracilis.*
d^2. Under surface and forehead white ; tarsus scutellated. *O. marinus.*
b^2. Tail even ; chest dark, rest of under-surface white ..... *O. nereis.*

Erythristic Eggs of Iceland-Gull, Larus glaucoides Meyer, and Herring-Gull, Larus argentatus Pontoppidan.

Mr. W. E. Glegg exhibited the following :—

Larus glaucoides, two erythristic eggs, taken in Labrador, *circa* 1860–1870.

Description :

No. 1. *Colour* :—Alternating areas of mars brown and light ochraceous salmon.

Measurements :—72·5×49·7 mm.

No. 2. *Colour* :—Almost monochromatic russet.

Measurements :—71·0×48·0 mm.

Larus argentatus, one erythristic egg, taken at North Cape, June 1897.

Colour :—Areas of pale pinkish buff, mikado brown and pallid neutral grey generally dispersed over the egg.

Measurements :—75·5×50·0 mm.

Colours :—Ridgway's ' Colour Standards and Color Nomenclature,' 1912.

Erythrism in gulls' eggs is referred to in literature, but specimens exhibiting this colour variation are rare. Dresser, in his ' Eggs of the Birds of Europe,' figures two very beautiful erythristic specimens of the eggs of the Great Black-backed Gull, *Larus marinus* Linnæus (pl. 95), and one of the Herring-Gull, *Larus argentatus* (pl. 97). The three eggs described here are very beautiful specimens. The intensity of the erythrism in the eggs of the Iceland-Gull is especially striking.

Dr. J. M. Harrison also exhibited the following :—

Captain Collingwood Ingram has sent for exhibition an unpigmented egg of the Black-headed Gull, *Larus ridibundus* Linnæus, a variety which he believes to be of extreme rarity. This was purchased on 5 June this year from a merchant in Copenhagen who dealt in gulls' eggs for human consumption. Although this man had during the course of his experience handled countless thousands of these eggs, this was the only completely white one he had ever seen.

Notes on Eastern African Birds.

Captain C. H. B. Grant and Mr. C. W. Mackworth-Praed sent the following two notes :—

(1) On the Movements in the Non-breeding Season of *Clamator jacobinus serratus* (Sparrman).

In the ' Ibis,' 1937, p. 402, we stated that in view of Whistler's articles in Journ. Bom. Nat. Hist. Soc. 1928, p. 136, and 1934, p. 523, it should be accepted that the Indian breeding bird migrates to eastern Africa in the non-breeding season.

This would appear to still hold good, and we therefore have the complication of indistinguishable birds breeding both in Africa and India, migrating in the non-breeding season from South Africa as well as from India to the central and northern areas of Africa. We do not, however, know how far north South African birds go, nor how far the Indian ones penetrate into Africa.

Roberts, Bds. S. Afr. 1940, p. 141, states that this species appears in South Africa in October and leaves in February or March, but that all do not leave South Africa is shown by two, in the British Museum collection, in black dress from Natal in July.

The birds are said to breed in India between April and September and then to disappear for the remainder of the year. This appears to be the fact, though there are specimens taken in India in October, November and January.

As this Cuckoo is only found in Africa, Arabia and India, and the bulk of them do leave India between September and April, they must move westward towards or to Africa, though it has not been recorded as coming aboard any ship or seen at sea, but we have examined two in the British Museum collection from southern Arabia taken in March and May which may show a movement to and through that area. These March and May

birds could have been moving eastwards to their breeding-grounds in India, though the May bird may show that it breeds in Arabia.

Breeding records for other parts of Africa are as follows :—French Sudan, August ; Abyssinia, March to June and October ; Kenya Colony, March to June ; Nyasaland, December to March ; Portuguese East Africa, November to April ; Northern Rhodesia, November to January ; *i.e.*, northern areas March to October, and southern areas October to April.

In trying to elucidate this problem of migration, we have studied all available material to see in which months birds are moulting, as Indian migrants should be moulting from September to about November, South African migrants from April to about June, and in other areas of Africa, June to about August, and so birds found in Africa moulting between September and November should be migrants from India.

Unfortunately we have found very few in moult, but there is evidence to show that adults are found in India in moult in September and October ; in Portuguese East Africa, Southern Rhodesia and Natal in January and February ; in Nyasaland in March, April and November ; and in the Transvaal in November. None of the African records can be claimed as Indian migrants, as they are moulting at the normal season after breeding.

Young birds moulting into adult dress are found in India in July and October ; British Somaliland and Kenya Colony, February ; Uganda, May ; Tanganyika Territory, January ; Portuguese East Africa, March ; and Angola, April.

All those from Africa agree with their being African-bred birds, and none can be claimed as Indian migrants.

The only evidence we still have of this species visiting Africa from India in the non-breeding season is the fact that it does leave India. We have enumerated the few known facts to invite the attention of others, especially those resident in India and Africa, to the movements of this most interesting species.

(2) On *Muscipeta perspicillata* Swainson, Bds. W. Africa, 2, p. 59, 1837 : Duivenkoek River, Swellendam, Cape Province, South Africa.

Mr. C. M. N. White in a letter dated 28 January, 1948, has invited our attention to Ann. Trans. Mus. 18, p. 304, 1936, where Roberts has given the new name *Tchitrea suahelica smithi* for *Muscipeta perspicillata* Swainson, not *Muscipeta perspicillata* Stephens in Shaw, Gen. Zool. Aves, 13, pt. 2, p. 113, 1826. Sherborn, Ind. Orn. p. 4872, 1929, gives Stephens as the first author of this combination, but it is not given in the Cat. Bds. Brit. Mus. vol. 4.

Stephens' description agrees with the fig. 1 on plate 152, in Levaillant, Ois. d'Afrique, 1805, but he has misquoted the plate number as 151. It is, however, clear that the bird he names is the Le Gobe-mouche à Lunettes of Levaillant.

Latham, Gen. Hist. Bds. 6, 1823, p. 204, has copied the description etc. from Levaillant, and quotes the plate number correctly.

In Bds. S. Afr. 1940, p. 288, Roberts uses *Tchitrea perspicillata*, but without an author, and in Bull. B. O. C. 68, p. 129, 1948, gives the new name *Tchitrea granti* for his *Tchitrea suahelica smithi* which is pre-occupied by *Tchitrea smithi* (Fraser).

It is clear that *Muscipeta perspicillata* Swainson, 1837, is pre-occupied by *Muscipeta perspicillata* Stephens, 1826.

We have studied the figures on plate 152 of Levaillant and there is no doubt that neither represent a known African species.

These figures show that they belong to the Flycatcher family and appear to represent two different birds, but fig. 1 is the genotype of Stephens' name, as he only describes this figure.

In Cat. Bds. Brit. Mus. 4, p. 332, 1879, Le Gobe-mouche à Lunettes has been placed as a query synonym of *Rhipidura javanica* Blyth, J. As. Soc. Bengal, 12, p. 936, 1843, as has *Platyrhynchos perspicillata* Vieill., N. Dict. d'Hist. Nat. 27, p. 14, 1818. Certainly Levaillant's fig. 1 agrees very well with specimens of *R. javanica*, having brownish upper-parts. We invite the attention of ornithologists interested in Asiatic species to this figure and Vieillot's name of 1818. The races we recognize in Eastern Africa are now as follows :—

Tchitrea ruwenzoriæ ruwenzoriæ Grant & Praed, 1940.
Tchitrea ruwenzoriæ ungujaensis Grant & Praed, 1947.
Tchitrea ruwenzoriæ granti Roberts, 1948.

Notices.

STOCK OF THE BULLETIN.

It is proposed to reduce the stock of the ' Bulletin,' but before this is done members are given an opportunity to acquire parts at 2/6 each. Applications should be made to the Honorary Secretary. No reply will be sent if parts are not available. The following are out of print :— Volumes 1, 2, 3, 4 (except 1 copy each Pref. and part 28), 17, 18, 20, 22, 24, 26, 28, 30, 32 and 34. Part 113 and Pref. vol. 64.

NEXT MEETING.

The next Meeting of the Club will take place on Wednesday, 20 October, 1948, at the Rembrandt Hotel, Thurloe Place, S.W. 7. Dinner at 6.30 P.M.

AGENDA.

Mr. W. E. Glegg will exhibit an historical egg of the Syrian Ostrich.

CORRIGENDA.

Vol. 68.

Page 9, line 39, for *Gallisda theklæ ellioti* read *Galerida theklæ ellioti*.
,, 16, ,, 31, for *Erolia canutus* read *Tringa canutus*.
,, 17, ,, 30, for *Caduelis spinus* read *Carduelis spinus*.
,, 19, ,, 20, before " On the Starling (British race) *Sturnus vulgaris britannicus* Bullough ", insert " Note by Dr. W. S. Bullough ".
,, 20, ,, 8, before " On *Sturnus vulgaris* Linnæus ", insert " Colonel Meinertzhagen continues ".
,, 22, ,, 1, for *Chloris c. chloris C. c. harrisoni* read *Chloris c. chloris*≲*C. c. harrisoni*.
,, 22, ,, 3, for *Chloris c. harrisoni C. c. aurantiivetris* read *Chloris c. harrisoni*≲*C. c. aurantiiventris*.
,, 25, ,, 4, for *S. e. stolcmani* read *S. e. sztolcmani*.
,, 25, ,, 37, for *Siitta europæa cisalpina* read *Sitta europeæ cisalpina*.
,, 26, ,, 1, for *S. e. cisalotina* read *S. e. cisalpina*.
,, 26, ,, 6, for Moraccan read Maroccan.
,, 26, ,, 12, for *S. e. hispaninesis* read *S. e. hispaniensis*.
,, 26, ,, 19, for Hampshitre read Hampshire.
,, 29, ,, 7, for *Turdus philomelos 'philomelos* read *Turdus philomelos philomelos*.
,, 30, ,, 7, for *T. p. clarkei hebridensis* read *T. p. clarkei*≲*T. p. hebridensis*.
,, 34, ,, 13, for *Circætus cinerascens* read *Circaetus cinerascens*.
,, 34, ,, 24, for *Calamæcetor leptorhyncha winterbottomi* read *Calamœcetor leptorhyncha winterbottomi*.
,, 56, ,, 31, for 1843 read 1837.
, 59, ,, 1, for co-called read so-called.
,, 70, ,, 37, for *Apodermus sylvaticus hirtensis* read *Apodemus sylvaticus hirtensis*.
,, 71, ,, 2, for *Apodermus* read *Apodemus*.
,, 90, ,, 1, for *S. u. coltarti* read *S. n. coltarti*.
,, 90, ,, 2, 16 and 20, for *S. u. davisoni* read *S. n. davisoni*.
,, 98, ,, 21, for *Budytes thumbergi feldegg* read *Budytes thunbergi feldegg*.
,, 98, ,, 36, for *Budytes thumbergi superciliaris* read *Budytes thunbergi superciliaris*.
,, 102, ,, 20, for *Sarothura ayresi* read *Sarothrura ayresi*.
,, 103, ,, 21, for *Sarothura ayresi* read *Sarothrura ayresi*.
,, 104, ,, 6, for *Sarothura rufa rufa* read *Sarothrura rufa rufa*.
,, 151, ,, 33, for *Certhia gutteralis* read *Certhia gutturalis*.
,, 151, ,, 37, for *Chalcomitra borgerto* read *Chalcomitra borgerti*.

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Names of new genera, species and races are indicated by clarendon type under the generic entry only.

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